

AUGUST, 1960



AMATEUR RADIO
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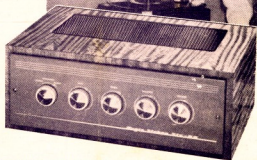
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EDITORIAL



REMEMBRANCE DAY CONTEST

August is the month every year during which the Wireless Institute of Australia holds its Remembrance Day Contest in memory of those Australian Amateurs who paid the supreme sacrifice in defence of our native land.

Held on the week-end nearest D-Day in the Pacific Campaign which heralded the cessation of hostilities in World War II., this Contest has increased in popularity in each passing year and is a marked symbol of respect for those who died that we may live.

Every year there is an increase in the Amateur participation indicative of the great interest the Contest enjoys from those who lived, and in latter years the sons of Amateurs whose fathers have passed to the great beyond.

For the past several years the Wireless Institute of Australia has been privileged to have notable people in the Australian community record an opening address which has been played prior to the commence-

ment of the Contest. This had added dignity and respect to the Contest and to everything for which it stands.

This year, 1960, His Excellency the Governor of Tasmania, Lord Rowallen, K.T., K.B.E., M.C., T.D., is honoring the Institute by recording the opening address. The Contest commences at 6 p.m. (1800 hours) E.A.S.T. 13th August and concludes at 5.59 p.m. (1759 hours) E.A.S.T. on 14th August. The tape recording, which will be played over official W.I.A. Stations in each State of the Commonwealth of Australia, will conclude at 5.58 p.m. (1758 hours) on Saturday, 13th August, and for the following two minutes all Amateurs will be asked to observe two minutes' silence in respect to our late members of the Australian Amateur Service.

They shall grow not old as we that are left grow old,
Age shall not weary them nor the years condemn.
At the going down of the sun and in the morning
We will remember them.

FEDERAL EXECUTIVE.

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75 WATT MODULATOR

● Many Amateurs are at a loss to know the best manner to obtain the audio power required to modulate their transmitters. A very good means to obtain 75 watts of audio is the use of 807's (or 1625's) in Class B zero bias. This article (and the following one) are reprinted from earlier issues of "Amateur Radio" that are now out of print.

THE modulator circuit is based on information appearing originally in R.C.A. "Ham Tips," re-printed in "Amateur Radio" (August 1948) and "Radiotronics" (July-August 1949) showing a method of using 807 valves as zero bias Class B modulators. Tests have proved that this system produces the results claimed and does this without the usual complications of bias and screen voltages, etc.

Considering the popularity and low price of 807 valves, this circuit has much to commend it.

A complete modulator unit with pre-amplifier was designed, built and tested as a prototype, and all relevant tests were made including actual operation with a 100 watt transmitter. The performance of the modulator was very satisfactory, after one or two modifications were made to the original circuit in order to produce the required frequency response. The pre-amplifier provides sufficient gain for most high impedance type microphones.

TEST RESULTS

The frequency response was taken overall from the input of the driver valve to the secondary of the modulation transformer, terminated in a resistive load of 10,000 ohms, and with 100 mA. d.c. through the secondary winding.

At full output of 75 watts the frequency response was within 1.5 db. from 200 to 7,000 c.p.s. The distortion present at full output over the frequency range was quite low and aural tests showed that the speech quality was excellent.

The response of the pre-amplifier stages can be modified to suit a particular microphone by altering the coupling condenser values and in the case of a crystal microphone by reducing the resistor value from grid to earth on the first valve. It will be noted that the low frequency response falls off below 200 c.p.s., the transformers being designed to aid in this respect.

Reduction of the high frequency response and harmonics produced by the negative peak clipping valve is also desirable, and can be achieved by the use of a filter or to a degree by a suitable by-pass condenser.

It is well known that speech waveform is of a very peaky nature, and this means generally that either a low average modulation level must be tolerated, or some means must be provided to overcome this limitation. Without suitable precautions, an increase of the audio gain above a certain level will cause some of the higher negative voltage peaks at the modulation transformer secondary to exceed the final r.f. stage d.c. plate voltage. This will reduce the effective voltage acting on

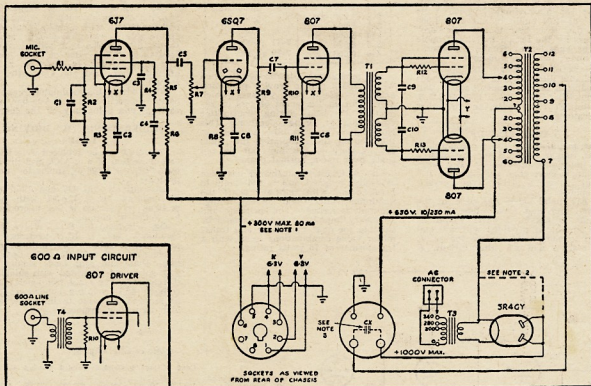


Fig. 1.—Circuit of 75 Watt Modulator.

- T1—Type IT388 A. & R. Transformer.
T2— " MT15A " "
T3— " PT1516 " "
T4—600 ohm input transformer.
C1—50 pF. Mica.
C2, C6, C8—10 μ F. 40 v.p.
C3—0.1 μ F. 200 v.w.
C4—8 μ F. 525 v.p.
C5, C7—0.01 μ F. Mica.
C9, C10—400 pF. Mica.

- CX—2,000 volt working, see text.
R1—20,000 ohms, ½ w.
R2—5 megohm, ½ w.
R3—1,500 ohm, ½ w.
R4—1.5 megohm, ½ w.
R5—0.25 megohm, ½ w.
R6—50,000 ohms, ½ w.
R7—0.5 megohm pot.
R8—5,000 ohm, 1 w.
R9—0.25 megohm, 1 w.

- R10—0.5 megohm, $\frac{1}{2}$ w.
R11—225 ohm, 3 w.
R12, R13—20,000 ohm, 1 w.

NOTES

1. If voltage exceeds 300, reduce with a resistor and by-pass with an 8 μ F. condenser.
2. Short circuit plates to filament if negative peak clipper is not required.
3. Up to 0.01 μ F. by-pass may be required (inc. r.f. by-pass).

DRIVING THE ZERO BIAS 807s

NOWADAYS it is quite common to have a contact on phone and hear, "I am using 807s in zero bias as modulators OM," and find another convert to using our "Maid of all work," the 807, in a new job.

This is quite understandable, for used in zero bias, the 807 is completely tamed, and parasitics are non-existent.

For those who have not got access to the original article, it may be as well to run briefly over the circuit, shown at "A" in Fig. 1.

The centre tap of the driver transformer is grounded, and the ends of the secondary windings connected to the screens of the 807s. A 20,000 ohm resistor is connected between the screen and grid as shown, and the plates of the 807s are fed to the conventional modulation transformer. The cathodes of both 807s are grounded.

With this circuit, the driver transformer was the catch, as it had to match the driver tube to the grids of the 807s which had an almost constant impedance of 14,200 ohms, grid to grid. In addition, to obtain 120 watts of audio it was necessary to use a driver which would supply 5 watts of drive to the grids; this meant a pair of 2A3s or equivalent, after allowing for transformer losses, etc.

In our applications, 120 watts is not required, and therefore the most popular arrangement has been to use a 6L6G as driver, which allows us to obtain at least 75 watts of audio, and for lower audio requirements, a 6V6 or 6P6 was adequate. Obviously then, with zero bias 807s, the harder we drive them, the more we get out, up to their limit of 120 watts, provided of course, that our plate voltage, regulation, and impedance match are correct.

Ahead of the driver, we need the usual voltage stages to lift the gain from the microphone to give a voltage which will enable the driver to operate at its correct output. With a crystal microphone, this is about two stages, or with a carbon microphone, one stage would be adequate.

So much for the circuit as originally described, and now to the circuit described in February 1950 "CQ," shown in "B" Fig. 1.

T1 is a conventional plate-to-push-pull input transformer, such as the type used to feed a 6C5 to a pair of 2A3s; in other words, an ordinary voltage transformer (most of us have a transformer of this type lying about). The centre tap of the transformer is grounded, and the ends of the secondary fed to the grids of a 6SN7, which operates as two cathode followers. The cathodes are not grounded, but are connected as shown to the 807 screens and grids.

The plates of the cathode followers are tied together, by-passed, and supplied with 300 volts. The remainder of the circuit is the same as "A".

Conventional methods of producing driving power in circuit "A" Fig. 1 would involve power consumption largely cancelling the power economy advantages of the Class B operation. Such power need be supplied to each grid only on its positive half of the

cycle, however, the cathode follower driver is a natural.

Note there is no connection from the 6SN7 cathodes to ground, except through the grids and screens of the 807s. Thus the plate current flowing in the 6SN7s is equal to the grid and screen current of the 807s, and varies from less than 1 mA. to peaks of 20 mA. with voice modulation. Actually the total current of a 6SJ7 pre-amplifier, 6SN7 two stage resistance coupled triode amplifier, and the 6SN7 cathode follower stage totals less than 10 mA. under static conditions. Since the driver section works on about 250 volts, its plate power as well as that of the two voltage stages is obtained from the one supply.

Actually the direct-coupled cathode followers supply approximately 10 volts of positive bias with resultant total static plate current on the 807s of 30 mA. Of course with modulation, this plate current increases to 80 to 150 mA., depending on the output required.

The voltage stages required ahead of T1 are important, and it is necessary to see that sufficient voltage is supplied to the primary of T1, otherwise the power output from the 807 stage will be inadequate.

It is recommended that the minimum required from a crystal microphone would be: a 6SJ7 high gain amplifier, followed by two triode sections of a 6SN7 as resistance coupled triodes. In the writer's case the voltage stages used were:—

Pre-amplifier on operating table, 6SJ7 and 6J5 to 500 ohm line. 6SN7 as two resistance coupled amplifiers, feeding T1, cathode followers and then the 807s Class B stage. From the 500 ohm line, all other stages are in the main rack of the transmitter. With this line-up, the gain control is one-fourth on for 100% plate modulation of a 50 watt power amplifier, i.e. 25 watts of audio. The meter reading the combined plate currents of the 807s varies from a resting current of 30 mA. to about 80 mA. on peaks, which means that for 25 watts of audio, the 807s are simply loafing along. The plate to plate im-

pedance was 10,200 ohms, and the plate voltage 500 volts, rather poorly regulated.

IMPEDANCES OF CLASS B STAGE

The following plate to plate impedances for the 807 Class B stage are appended for readers who have not a copy of the original article.

| Case | 1 | 2 | 3 |
|-------------------------------------|------|------|-----------|
| Plate Volts | 750 | 600 | 500 |
| Plate to Plate load | 6650 | 5050 | 4000 ohms |
| Output | 120 | 90 | 72 watts |
| Max. av. anode current (two valves) | 240 | 240 | 240 mA. |

NOTE—If the Class B stage is run at lower plate currents or voltages, the plate to plate impedance will be different. The calculations are very simple with the following method, which is accurate enough for our requirements.

CALCULATING IMPEDANCE

In a Class B stage at any instant the grid of one tube will be driven positive and the other is driven past cut off, and therefore in calculating impedances we need only consider one tube. As far as the one tube is concerned the primary of the output transformer is a resistance and therefore we have this plate load (R_p) and the resistance of the Class B tube in series across the power supply. We can assume that about 80% of the power supply voltage will appear across the plate load R_p as audio voltage, so if our plate supply is 500 volts, 400 volts peak of audio will appear across the plate load R_p . This gives us our voltage for calculation.

Now we want the peak current. Manufacturers' characteristics give the maximum average current for two tubes (sine wave input), so to find the peak current we divide the average current by 0.636. Therefore our peak current for Case 3 in the lists above is—
 $240 \text{ mA.} \div 0.636 = 377 \text{ mA.}$
 $= 0.377 \text{ Amp.}$

Then from $R = E \div I$ we have—
 $400 \div 0.377 = 1061 \text{ ohms}$ for one tube.
 The plate to plate load for two tubes will be four times this value or 4244 ohms, which is very close to the Manufacturers' ratings (Case 3).

The audio output can be found by the simple formula $W = (I \times E) \div 2$ and working on peak values found, we have $(0.377 \times 400) \div 2 = 75 \text{ watts output.}$

Below is the case of Class B 807s to give 100% modulation of a 50 watt carrier (25 watts of audio). Example—Supply voltage 500 volts.

Av. plate current (2 tubes) = 100 mA.
 $= 0.1 \text{ Amp.}$

Then $E_{\text{peak}} = (500 \div 1) \times (80 \div 100) = 400 \text{ volts.}$

(i.e. 80% of supply voltage.)

Peak current $I_p = 0.1 \div 0.636 = 0.152 \text{ Amp.}$

Plate impedance (one tube) $= E_p \div I_p = 400 \div 0.152 = 2630 \text{ ohms.}$

Then plate to plate impedance = $2630 \times 4 = 10,520 \text{ ohms,}$
 and audio output = $(I_p \times E_p) \div 2 = (0.152 \times 400) \div 2 = 30.4 \text{ watts.}$

—J. C. Duncan, VK3VZ

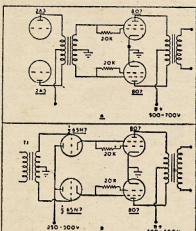


Fig. 1.

USING OVERTONE OSCILLATORS

RICHARD J. HEIGHWAY,* VK3ABK/T

CRYSTAL oscillators, operating in overtone modes, have been a feature of many circuits in overseas publications for some years. However, the adoption locally of this useful oscillator arrangement has been confined mainly to v.h.f. converters, where elimination of interfering signal injection within the i.f. tuning range has been the main consideration. Even in this application some difficulty has been found in the adjustment of the correct operating mode, and the following discussion is an attempt to describe the various circuit arrangements, and a method for making them overtone.

The fundamentals of this type of oscillator have been described by others,^{1,2} but a resume may help to explain the adjustment procedure. The familiar quartz crystal will resonate on numerous frequencies due to the various modes of mechanical motion which can be brought about by electrical stimulation. However, these resonances are far enough apart to make operation on one at a time possible, with high Q circuit constants.

The frequency of oscillation of a crystal will depend on whether it is series or parallel resonant. Fig. 1 is the equivalent electrical circuit of a crystal in a holder, where L, C and R comprise the series impedance and C1 is the combination of the capacity formed by the electrodes and crystal and the crystal holder. The series resonant frequency is therefore

$$F_s = \frac{1}{2\pi\sqrt{LC}}$$

and the parallel resonant frequency is given by

$$F_p = \frac{1}{2\pi\sqrt{L((C \times C_1) + (C + C_1))}}$$

From these equations it is seen that the series resonant frequency is lower than the parallel resonant frequency.

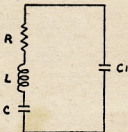


FIG. 1.

Overtone oscillators make use of this series resonance as the crystal is part of the feedback loop, or in the case of the bridge oscillator,³ one arm of the bridge.

It follows that the feedback frequency F_p , and so NF_p , where N is harmonic extracted, will be lower than F_o (or NF_o) in a parallel resonant circuit. Figs. 2 and 3 shows the a.c. circuits of two common configurations, the grid resistors being included as an aid to later description.

In Fig. 2 feedback from the anode circuit to the grid is by inductive coupling, maintaining correct phase relationship in the transformer connections, with the crystal in series resonance. Fig. 3 shows feedback voltage taken from a point 180 degrees out of phase with the anode of the tube, giving the required in phase voltage at the grid.

Resistor R in this circuit is necessary to raise the feedback point above earth, an r.f. choke would do the same, and it also provides a control over the voltage at this point. In each case the amount of feedback must be adjusted, and this is done by moving the grid coil in relation to the anode coil in Fig. 2 and in Fig. 3 by varying the ratio of the values of the two capacitors.

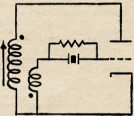


FIG 2

It should be noted here that the greater the amplitude of vibration of a crystal, the less stable is the frequency and only sufficient feedback to maintain reliable oscillation should be used. The crystal in each circuit provides a low impedance path at the series resonant frequency, or n times the frequency, and with Q_s in the range of 10,000-100,000, depending on the type of cut, feedback at intermediate frequencies is negligible. The grid resistor in Fig. 2 being across the crystal will lower the Q and make the feedback path less selective, so using a low activity crystal could mean less reliable operation. The activity of a crystal is checked by using a g.d.o. and the method described by VK2QA, or with the crystal inserted in place of the g.d.o. coil, comparing the meter deflection with a known good crystal, or specially cut overtone type.

So much for why they work; now, how do we get a particular circuit to overtone? First of all the anode circuit must be tuned to the desired harmonic using the indispensable g.d.o. A v.t.v.m. connected via a 1 meg. resistor to the grid of the tube, or a milliammeter in series with the grid resistor if a v.t.v.m. is not available, is used as an indicator.

With loose coupling in the case of inductive feedback and minimum capacity at C in the capacitive voltage divider system, the usual supply voltages are applied to the circuit. By adjusting the feedback to the point where maximum voltage (or current) is indicated by the meter, the circuit will overtone on the desired frequency. The anode circuit tuning is then peaked to give maximum output.

Due to the fact that the feedback loop introduces capacity across the

anode circuit, any adjustments made will affect the anode tuning, especially in the circuit of Fig. 3 where the shunt capacity is usually greater. Care should be taken to ensure that C1 does not become too small, resulting in insufficient feedback voltage to give reliable starting. This can be checked by switching the h.t. off and on several times while watching the grid meter, or listening to the beat note between the overtone signal and a receiver b.f.o. If oscillation does not commence immediately after switching on h.t., the anode circuit should be detuned slightly on the high side of the harmonic frequency, and the feedback coupling or capacity increased, once more aiming for maximum grid current or voltage.

When the circuit is overtone correctly there will not be oscillation at the crystal fundamental frequency, such output ceasing at about the same time as the overtone starts. Maximum grid voltage or current does not correspond to maximum output, or minimum anode current,⁴ both of which fall close to the critical point where the circuit ceases to overtone.

Using the circuit of Fig. 3 a recent check of about twenty assorted crystals, including several ex-Japanese, and some of rather doubtful origin, produced strong overtone oscillations in almost every one.

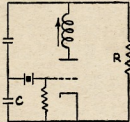


FIG. 3.

The only exceptions were when the holder contained a broken crystal, or none at all. Some crystals showed only weak attempts at oscillation, until they were cleaned by scrubbing with a toothbrush and warm soapy water, being sure to remove any small patches of metallic deposit on the crystal where the electrodes make contact. The above checks were made using one half of a 12AT7 coupled via a 47 pF. capacitor to the grid of the second half, and a 1 meg. grid resistor. The following conditions applied: E_{a1} , 200v., I, 6 mA., and E_{a2} -14v.

Overtone circuits have been installed in test oscillators, 144 Mc. converters for radio club members, and portable transmitters for 144 and 288 Mc. with excellent results, and could no doubt be used in many other instances.

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- 4 "Application of the Electronic Valve," Philips Technical Library; Book IV.

* 22 Leonard St., Belmont, Geelong, Vic.

CV and VT (U.S.A.) Service Tubes and Equivalents

| VT | Commercial Type | CV | VT | Commercial Type | CV | VT | Commercial Type | CV |
|------|-----------------|-----------------------------|------|-----------------|---------------|------|-----------------|------|
| 27 | 30 | 604 | 109 | 2051 | 1798 | 183 | 1R4/1294 | |
| 28 | 24A | 936 | 112 | 6AC7 | 660, 747, 846 | 184 | VR90 | 3799 |
| 30 | 201A | 750 | 114 | 5T4 | 1846 | 185 | 3D6 | 2710 |
| 31 | 31 | 947 | 115 | 6L6 | 1943 | 188 | 7E6 | 891 |
| 33 | 33 | 949 | 115A | 6L6G | 1947 | 189 | 7F7 | 893 |
| 36 | 36 | 1775 | 116 | 6SJ7 | 591 | 190 | 7H7 | 895 |
| 38 | 38 | 712 | 116A | 6SJ7GT | 592 | 192 | 7A4 | 1770 |
| 44 | 32 | 711 | 116B | 6SJ7Y | 866 | 193 | 7C7 | 1777 |
| 45 | 45 | 596/610 | 117 | 6SK7 | 1981 | 194 | 7J7 | 897 |
| 46 | 866 | 32 | 117A | 6SK7GT | 1982 | 196 | 6W5G | |
| 46A | 866A | | 118 | 832 | | 197A | 5Y3GT/G | |
| 47 | 47 | 1772 | 119 | 2X2 | | 198A | 6G6G | 1926 |
| 48 | 41 | 608 | 120 | 954 | 1095, 1579 | 199 | 6SS7 | 1993 |
| 56 | 56 | 611 | 121 | 955 | 1059 | 200 | OD3 | 686 |
| 57 | 57 | 612 | 124 | 1A5GT | 756 | 201 | 25L6 | 522 |
| 58 | 58 | 613 | 125 | 1C5GT | 1805 | 201C | 25L6GT/G | |
| 65 | 6C5 | 582/1649 | 126 | 6X3 | 573 | 202 | 9002 | 664 |
| 65A | 6C5G | 581 | 126A | 6X3G | 572 | 203 | 9003 | 665 |
| 66 | 6F6 | 1186, 1911, 1912 | 126B | 6X5GT | 574 | 204 | 3C24 | 789 |
| 66A | 6F6G | | 128 | 1630 | 2715 | 205 | 6ST7 | 1996 |
| 68 | 6B7 | 1711, 1891 | 130 | 250TL | | 206A | 5V4G | 729 |
| 69 | 6D6 | 1900 | 131 | 12SK7 | 543 | 207 | 12AH7GT | 529 |
| 70 | 6F7 | 1915 | 132 | 12K8 | 703 | 208 | 7B8 | |
| 74 | 5Z4 | 1864 | 133 | 12SR7 | 700 | 209 | 12SG7 | 694 |
| 75 | 75 | 614 | 134 | 12A6 | 525 | 210 | 1S4 | 783 |
| 76 | 76 | 615 | 135 | 12J5GT | 535 | 211 | 6SG7 | 1978 |
| 77 | 77 | 616 | 136 | 1625 | 659 | 212 | 958 | 650 |
| 78 | 78 | 2544 | 137 | 1626 | 1755 | 213A | 6L5G | 862 |
| 80 | 80 | 617 | 138 | 1629 | 1756 | 214 | 12H6 | 916 |
| 83 | 83 | 618 | 139 | VR150 | 216 | 215 | 6E5 | 1906 |
| 84 | 84/8Z4 | 619, 2548 | 144 | 813 | 26, 177 | 217 | 811 | 628 |
| 86 | 6K7 | 1942 | 145 | 5Z3 | 1861 | 218 | 100TH | 2551 |
| 86A | 6K7G | 1941 | 146 | 1N5GT | 1823 | 220 | 250TH | 2589 |
| 86B | 6K7GT | 1943 | 147 | 1A7GT | 1802 | 221 | 3Q5GT | |
| 87 | 6L7 | 1951 | 148 | 1D8GT | 1811 | 222 | 884 | 647 |
| 87A | 6L7G | 1950 | 149 | 3A8GT | | 223 | 1H5GT | 1820 |
| 88 | 6R7 | 1963 | 150A | 6SA7GT | 1967 | 224 | 2C34 | |
| 88A | 6R7G | 1962 | 151 | 6A8G | 578 | 225 | 307A | 2612 |
| 88B | 6R7GT | 1964 | 151B | 6A8GT | 580 | 226 | 3EP1 | 817 |
| 89 | 89 | 833 | 152 | 6K6GT | 1940 | 229 | 6SL7GT | 1985 |
| 90 | 6H6 | 1301, 1930 | 152A | 6K6G | 1938 | 231 | 6SN7GT | 1988 |
| 90A | 6H6GT/G | | 153 | 12C8Y | | 233 | 6SR7 | 867 |
| 91 | 6J7 | 1074, 1936 | 161 | 12SA7 | 537 | 237 | 957 | 2700 |
| 91A | 6J7GT | 1837 | 162 | 12SJ7 | 697 | 239 | 1LE3 | |
| 92 | 6Q7 | 588 | 163 | 6C8G | 1896 | 241 | 7E5 | 890 |
| 92A | 6Q7G | 587 | 164 | 1619 | 723 | 243 | 7C4 | 2706 |
| 93 | 6B8 | 1894 | 165 | 1624 | | 244 | 5U4G | 575 |
| 94 | 6J5 | 1067, 1933 | 167 | 6K8 | 1945 | 245 | 2050 | 2721 |
| 94A | 6J5G | 1932 | 167A | 6K8G | 1944 | 246 | 918 | 2692 |
| 94D | 6J7GT/G | 1934 | 168A | 6Y6G | 515 | 247 | 6AG7 | 1882 |
| 95 | 2A3 | 1831 | 169 | 12C8 | 531, 837 | 248 | 3CP1 | |
| 96 | 6N7 | 1957 | 170 | 1ESGP | | 250 | EF50 | 1578 |
| 97 | 5W4 | 1849 | 171 | 1R5 | 782 | 252 | 923 | |
| 98 | 6U5/6G5 | 504 | 172 | 1S5 | 784 | 254 | 304TH | 2611 |
| 99 | 6F8G | 1917 | 173 | 1T4 | 785, 1971 | 259 | 829 | 632 |
| 100 | 807 | 124, 1060, 1364, 1374, 1572 | 174 | 3S4 | | 260 | VR75 | 3798 |
| 100A | 807 Special | | 175 | 1613 | 655 | 264 | 3Q5 | 819 |
| 103 | 6SQ7 | 1990 | 176 | 6AB7 | 661, 1873 | 266 | 1616 | 656 |
| 104 | 12SQ7 | 546 | 177 | 1LH4 | 780 | 268 | 12SC7 | 540 |
| 105 | 6SC7 | 1969, 2716 | 178 | 1LC6 | 778 | 269 | 717A | 3594 |
| 106 | 803 | | 179 | 1LN5 | 781 | 286 | 832A | 788 |
| 107 | 6V6 | 510 | 180 | 3LP4 | | 287 | 815 | 2663 |
| 107A | 6V6GT | 509 | 181 | 7Z4 | 1790 | 288 | 12SH7 | 922 |
| | | | 182 | 3B7/1291 | | 289 | 12SY7GT | 698 |

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MT105

Amateur Radio, August, 1960



Reporting—As Distinct From QSL'ing

WITH the publication of Barney Smythe's article on QSL'ing in January "A.R.", I am relieved of the task of cramming this subject, together with the facts of personal reporting, into one article. WIA-L2001 has covered his subject well and there is not much which can be added to it. One point which I would like to emphasize, however, is the design of cards. An eye-catching card will work wonders for a non SWL'ing Amateur, that is provided the card is filled out correctly as emphasized by a case concerning one of my American friends, Gerry Andrew, W1/7959.

Gerry is one of that country's leading listeners and seeing-eye to blind Ham WINLM. Gerry is a chap in his 40's, who has not been a listener terribly long by BERS195 standards, and in fact has sent out only 600 cards in his life. But he has 150 countries confirmed and has reports out to another 130 from which, if he receives his usual 70% return, he should have confirmations from a very large number of countries in a very short time.

Designing his own card and letting his head go as regards information contained therein, this keen listener has earned the praise of many Amateurs who have received a report from him. So impressed have some chaps been, that they broke their life-time rule of not answering s.w.l. reports, to give this chap a card and to congratulate him on a well-set out card. The part that interested me most was the fact that his card contains little more than WIA-L2001's, but most of the required information is printed on the card. Moreover, it is one of those glossy American efforts and is certainly eye-catching.

However, that is not the subject in hand, and we must push along. Barney has covered the reporting by card, which is the only system we can use here in the Bureau. However many of us prefer to send a report which contains information other than that required on a QSL card and that information is the subject under discussion here.

When sending a report direct, it appears to me to be a waste of postage to send just a card, when a fully informative report would be of far more value to the recipient than a plain card giving the bare facts of a contact. It is of course very nice to know that you are getting somewhere you did not anticipate, but far better to know in just what manner your signals are reaching that point.

Assuming that the listener feels justified in sending his report to the Amateur concerned, he starts out with the essential items of the basic report, date, time (preferably in GMT), band, mode of transmission, antenna in use, rx, station in contact with, and above all the signal strength, readability and tone if a c.w. station. This portion of the report is widely misused by listeners and Amateurs alike. I won't go into the misuse of the RST code by Amateurs (for you can find out all about that in any contest), but my concern here is that the s.w.l. should use the correct ratings when reporting.

Remember, if an Amateur has a signal of strength 5, he does not want to be told it is strength 9, and I am quite sure he would like to know if his c.w. had got down to 7 in tone rather than be told it was T9. But I am a little ahead of myself here.

What is this RST system? It is a means by which we can identify the state of a signal, R for readability, S for strength, and T for the tone of a c.w. transmitter.

There are five stages of readability:

- 1—Unreadable,
- 2—Occasional words only,
- 3—Readable with difficulty,
- 4—Readable with little difficulty,
- 5—100% copy.

With signal strength, there are nine stages, and I won't enter the usual controversy on S meters:

- 1—Faint,
- 2—Very weak,
- 3—Weak,
- 4—Fair,
- 5—Fairly good,
- 6—Good,
- 7—Moderately strong,
- 8—Strong,
- 9—Very strong.

There are also nine stages of tone for c.w. transmitters:

- 1—Rough hissing tone,
- 2—Very rough a.c. note,
- 3—Low-pitched a.c. note,
- 4—Rough a.c., but slightly musical,
- 5—Musically modulated note,
- 6—Slight whistle,
- 7—Almost a d.c. note, some ripple,
- 8—Good d.c. note, faint ripple,
- 9—Pure d.c.

As well as this, if the c.w. note appears chirpy, add C after the report; should there be key clicks, add K; and if the note appears to be crystal controlled, add X.

By working strictly to this international system, and always giving a true report, you will do much towards ensuring that high percentage of returns. Do not be bashful about giving a bad report or pointing out a fault for most chaps will welcome such information, particularly if their contact has not mentioned it. They can then rectify the trouble and put a clean signal on the band. Of course there are those few who put a rough c.w. signal or an over-modulated splattering phone signal over a large portion of the band. These guys should be told long and often. You won't offend them, for they cannot be offended and could not care less. Very fortunately we do not often strike that type of chap too often in Australia.

One final word of warning, do not chip a fellow for bad operating. You probably would not do as well yourself and in any case he has not had a great chance to learn if he is a newcomer. Facilities just do not exist for training new operators. Clubs certainly teach theory and there are plenty of slow Morse broadcasts about, but the individual is usually left to his own devices when it comes to operating.

Another little point worth mentioning is your receiver description if you

have an American set, it will usually suffice to refer to it by its designation, BC342N, or such, but many of us have AR7s, etc., which to a DX man in a foreign country would mean very little. I find it more satisfactory to refer to it by its title, with a short description of the various stages and anything which you may consider is of interest.

I would like to add here that it is not necessary to worry about using any language other than English in your report, as it is readily understood by the majority. If not, it is not hard for them to have it translated, particularly if you use a considerable amount of Ham jargon.

An accurate description of your antenna, together with its length, height and direction, whether or not an antenna coupler and preselector are used is most necessary to ensure a complete informative report. Interference (QRM) and its type, whether local or otherwise, atmospheric (QRN) and fading (QSB) of a slow or rapid nature, together with particulars of other stations operating on the band are all of the utmost importance in compiling a comprehensive report. It is advisable also to mention your current weather conditions.

To most Amateurs a report of this nature would be considered adequate, but our very good friend, Maurice Cox, WIA-L3055, goes even further. His very colorful card bears all the above information on its reverse side. However, as well as this he writes a personal note using the official VK3 report form, giving extracts of items which he heard the Amateur mention. This is final proof that he actually heard the contact which he is reporting. He always asks if the report is useful and if the station requires further reports. Appreciation of Maurice's reports can be summed up in a letter received from a VK3 DX man.

It appears that this chap never QSLs to s.w.l.s, but the report was of benefit to him as he was being received off the side of the beam.

Speaking from my own experience in respect to sending personal reports, I find the response much the same as that of my good friend. The majority of my QSLs go out as normal, made due to the large number handled (when I am really operating), but nevertheless, I do send out many VK reports direct, in which case I always enclose a personal note. However, mine usually are to chaps who are having trouble, or who are testing a transmitter. I have hundreds of cards here in the proverbial shoe box, but there is one which I have displayed very prominently on the door of the cabinet containing my gear. I heard this chap testing his transmitter one afternoon not so very long ago, so I spent a little time noting various characteristics which would interest him, and sent a report with the usual card and stamped addressed envelope. I received a reply by return mail and I am sure Perc VK3OZ, to whom the report was sent, will not mind being quoted: "Tnx Don for a very informa-

(Continued on Page 11)

S.S.B.—HOW? WHY?

K. B. POUNSETT,* VK2AQJ

MORE and more Australian Amateurs are becoming interested in and recognising the wonderful advantages of Single Side Band, so that those of us who have been using this mode for some time have become the targets for many questions. Let me hasten to say that we do not mind these queries in the least. Here are some of the questions which seem to crop up again and again with my answers to these problems.

Q1: Why go to all that trouble to transmit voice when a.m. can do it simpler?

A: Single side band is a little more complex, but it does transmit voice much better than a.m. In fact, four times better for the same power in the antenna and given a selective (3 kc. bandwidth) receiver at the other end, eight times better. It eliminates the carrier, the greatest single cause of interference that exists today, and halves the bandwidth of the transmitted signal, a point well worth considering now that we are to lose some of our band space. It is not subject to selective fading. The initial cost of a sideband transmitter is less expensive than an a.m. transmitter of comparable output as there is no expensive modulator to provide. The final amplifier need be the only transmitting type tube in the equipment, this saves on the power bill, too.

Q2: Do I require a special receiver to copy sideband?

A: Certainly not! S.s.b. can be copied on a regenerative receiver, believe it or not. However, there are a few basic requirements that your receiver should meet, and these do not only apply to an s.s.b. receiver. The receiver requires a smooth tuning system, a slow tuning rate and practice. The oscillators in your receiver must be stable and you need to be able to vary your beat oscillator frequency to each side of the intermediate frequency. If you use a diode detector, the b.f.o. injection needs to have a fairly high amplitude. It is preferable to have the r.f. and audio gain controls separate.

Q3: What is the correct method of tuning sideband?

A: This problem is probably the biggest objection raised by the newcomer to s.s.b. This question has been answered in this and many other publications but once more will do no harm. There are two simple ways of tuning sideband, signal-frequency carrier injection and intermediate frequency carrier injection. When using signal frequency injection, the carrier oscillator must be very stable and must not overload the receiver. The v.f.o. or frequency meter (e.g. BC221) may provide the carrier or you can build a separate oscillator for the purpose. With this method, drift in the receiver does not effect the intelligibility of the signal unless the drift is excessive, but drift in the carrier oscillator certainly will.

The receiver is set up to receive a.m. and the sideband signal is centred in the i.f. bandpass for maximum "duck-talk" or maximum deflection of the S meter. The carrier oscillator is then slowly tuned across the s.s.b. signal until a point is reached where the signal becomes readable. If the a.m. transmitter v.f.o. is used for this, it will ensure that both stations are on the same frequency.

The b.f.o. method seems to be the most popular. Tune in the s.b. signal as for a.m. as already described. Reduce the r.f. gain, increase the audio gain to near maximum and turn off the a.v.c. Switch on the b.f.o. and, using the r.f. gain control to adjust the output level of the rx, S-L-O-W-L-Y turn the b.f.o. pitch control from one side to the other until the signal becomes readable. Note this b.f.o. setting and when tuning sideband on that band, always use that setting and tune only with the main dial. The general rule is that lower s.b. is used below 10 Mc. and upper s.b. is used above.

Tuning single side band takes practice and after a little experience you will wonder how you ever had difficulty. However, if you still cannot make head or tail of sideband, Man, you have a receiver that requires your careful and urgent attention.

Q4: Why are some sideband signals harder to tune than others?

A: The ease of tuning a sideband signal is directly proportional to the cleanliness (i.e. good sideband and carrier suppression, lack of distortion, stability) of the signal.

Q5: How can I zero-beat my a.m. receiver to the frequency of the s.b. station that I wish to contact?

A: The lack of transmitted carrier seems to be the trouble here, but a little thought will reveal that when the s.b. signal sounds natural, the receiver b.f.o. is in zero-beat with the carrier that is not there. I know that this sounds rather Irish, but nevertheless it is true. You zero-beat your v.f.o. with the receiver and you are now on the same frequency as the s.b. station.

Q6: Why do s.s.b. stations sometimes seem to have excessive width?

A: There is no doubt about it, a few s.b. stations do have rather wide signals, due to improper operation, but somebody soon tells them about it, sidebanders are a very critical lot. However, there is often another explanation. Most of us, when using our receivers for a.m., run them with the r.f. gain full on and the a.v.c. on. The receiver has little selectivity in the r.f. stage or stages so that when a strong sideband station is operating within 25 kc. or so, it may, due to the high signal level, overload the front end. At the same time, a.v.c. action takes place, causing the gain of the receiver to fluctuate at an audio rate, the result being very similar to splatter from an over-modulated a.m. transmitter. This effect is not apparent with adjacent

a.m. stations as the steady carrier causes the a.v.c. to hold the receiver gain to a constant level.

The cure is very simple. Switch off the a.v.c. and reduce the r.f. gain in a bad case, although just reducing the r.f. gain usually has the desired effect.

Q7: I built a product detector into my receiver, but it doesn't seem to work properly. Why?

A: This is a very common complaint. The product detector is used to mix the s.s.b. output from the i.f. channel with the b.f.o. injection and give audio output. When b.f.o. injection is removed, all output should cease but often this is not the case. The trouble can usually be eliminated by decreasing the i.f. signal input to the product detector. Excessive signal input to the product detector causes rectification to occur and true mixing does not take place. Try a 2 pF. coupling capacitor between the i.f. and signal grid and a 100 pF. from grid to ground. The b.f.o. injection should be about two volts r.m.s. while 0.2 volts r.m.s. is adequate from the i.f. channel. My favourite product detector is the Crosby three-triode one.

Q8: Which is the better method of generating s.s.b., the filter or phasing method?

A: This is a matter of personal choice and the availability of parts. My choice is the filter method. It is very simple once you have obtained the crystals or the mechanical filter. The initial adjustment is not difficult, a very simple v.t.v.m. (uncalibrated will do) and an oscillator such as a BC221 are all that are required for alignment of the filter. This alignment stays put for a very long period. My own crystal filter has only required attention once in the past three years and that was caused by a circuit modification.

The phasing method is very popular in Australia because audio phase shift networks are readily available. An oscilloscope is helpful in the adjustment of this type for best results, but do not worry if you do not own a scope, your receiver can tell you a lot about your alignment. The phase shift network is designed to work over a range of 300-3,000 cycles. Audio frequencies outside this range are not shifted in phase sufficiently, so care must be taken to restrict the audio response of the speech amplifier. It is my opinion that most of the stations that have poor sideband suppression have not taken enough care in this direction.

It does not matter which method is used, as long as a good s.b. signal is produced. Both methods are capable of this.

Q9: Why use 5 or 9 Mc. as the output frequency of the sideband exciter?

A: The s.s.b. signal must be generated at the required output frequency or heterodyned to that frequency. An 80 metre sideband signal for instance, cannot be multiplied to 40 or 20 metres, as we are so used to doing in an a.m.

* 22 Seiffert Centre, Quesnabeyan, N.S.W.

or c.w. transmitter. With some filter-type exciters, the s.b. is generated at a low frequency around 450 kc. and then heterodyned to a high frequency. Recently high frequency crystal filters have been making an appearance. Phase shift type generators also fall into two categories, those that produce the signal at the output frequency and those that generate it at some i.f., say 9 Mc. The sideband transmitter that generates the signal at the output frequency has a couple of disadvantages. The r.f. phase shift circuit requires adjustment when large frequency changes are made within a band unless the operator is willing to tolerate a degraded signal. Band switching is complicated by the need to change the r.f. phasing circuit values from band to band.

When heterodyning the signal into the desired band, a careful choice of frequencies must be made. Let us take some actual frequencies and see what happens when our choice is the wrong one. Assume that we have an exciter with an output frequency of 7.1 Mc. To put this signal on 14.3 Mc., where most s.b. stations operate on 20 metres, we will require a mixing frequency of 7.2 Mc. Mixing these two signals will give us output on 14.3 Mc. rightly enough, BUT the second harmonic of our 7.2 Mc. oscillator will appear at 14.4 Mc. and if it gets into the grid of the subsequent amplifier, as it surely will, it will be amplified along with the 14.3 Mc. energy. The 14.3 Mc. tuned circuits will have insufficient selectivity to reject the 14.4 Mc. c.w. signal. Transmitting this c.w. signal at 14.4 Mc. is illegal but worse than that, it is using valuable power that should be going into the s.b. signal.

Now consider the exciter output frequency of 5.3 Mc. Mixing this signal with that from a 9 Mc. oscillator produces a sideband signal at 14.3 Mc. The second harmonic at 18 Mc. is far enough removed to cause no trouble. The difference frequency is also useful in this case as it falls on 3.7 Mc.

Before deciding on the output frequency of your exciter, put pencil to paper and work out where those harmonics will fall. There are traps set for young players in this aspect of getting a sideband signal on the air.

Q10: What type of linear amplifier should I use?

A: Many Amateurs have been worried by the thought of these amplifiers and are quite sure that they have had no experience with them, particularly in the r.f. field. Receivers and audio amplifiers are full of them, so they are not so strange after all.

In single sideband transmitters, the driver amplifiers are usually operated in Class A and sometimes in AB1. The final can be operated in Class AB1, AB2 or B. There are several points to consider in each case.

The big advantage of AB1 operation is that no power is needed to drive the tube, only voltage is required. This means that the driver does not need to be a large power tube. A 6A7, 6CL6 or 12BY7 is suitable for this job. As grid current is not drawn in a Class AB1 amplifier, a simple bias supply can be used and by metering the grid circuit, overdrive can be seen as soon

as it occurs. The 6146 tube is admirably suited for this class of service. A new tube in the U.S. has been announced that should be nicely for the Australian Amateur, this is the 7270 and will run 150 watts comfortably.

When a tube is operated in AB2, grid current is drawn over portion of the cycle, so that a variable load is presented to the driver amplifier. This problem can be overcome by using a swamping resistor across the final grid tank circuit. More driving power is required to offset this swamping. The bias supply requires regulation and careful design. The distortion figures are greater than for AB1 but less than for Class B. The old favourite, the 807, works very well in this class.

Class B operation offers some advantages, especially when zero bias triodes are used. This gets away from bias requirements and screen voltage problems are eliminated. However, considerable driving power is required.

For absolute simplicity and good efficiency, the "ZL Linear," designed by ZL1AAX, is hard to beat. The amplifier devised by G2MA is very similar and does have the advantage that a lower value of bias will cut the tube off while receiving, if this is found necessary. Neither of these two amplifiers require a "stiff" grid bias or regulated screen supply.

In conclusion, some don'ts are in order. Don't tolerate any regeneration or instability in your s.s.b. transmitter. Don't overdrive any part of it. Don't turn up the audio gain in order to make the speech peaks read the same level on the final plate meter as that obtained with steady tone input. Speech peaks of about half the steady tone figure are adequate. Remember that the plate meter is far too slow to read speech peaks. If you have ever used a bug on c.w., you will know that the dots read about half the value on the plate meter as the dashes, but both are received at the same strength.

If you are interested in sideband, and who isn't these days, two books will be found very helpful. These are the A.R.R.L.'s "Single Side Band for the Radio Amateur," and "The New Sideband Handbook," by Don Siner, W6TNS. If you have any problems, join any of the sideband nets that are to be heard nightly on 40 metres that you will be very welcome. Let your problems be our problems.

★

YOUR MASTER SWITCH

Do the members of your family know how and where to turn off your rig? Do they know how to treat a person suffering from electric shock? Remember that death is permanent, and so for your safety you should instruct your family how to turn off your rig and you should also prominently display that page of the Call Book dealing with First Aid Case of Electric Shock. Do not become an accident statistic, take care and enjoy your hobby.

A slightly dumb Amateur, Sam,
Just couldn't stay out of a jam,
A live rig he'd test
But the bleeders went west
And presto—barbecued Ham.

—Courtesy "CQ," Jan. 1960.

REPORTING—AS DISTINCT FROM QSL'ING

(Continued from Page 9)

tive report which I appreciate. Such reports are of great value when the transmitter is being adjusted . . ."

Our hard working QSL Manager knows how many reports I send out from here when the station is in full swing (which it has not been for almost a year), and I am sure that he would agree that it is well worth it when you get a reply such as this from one of our very busy DX men.

I was always of the opinion that comparative reports were of value, but have learned that this is not always the case. If station A is operating under exactly the same conditions as station B (that is, with the same power, similar antennae, etc.), then a comparison will be interesting, but very rarely does this situation exist. A very simple example of this can be taken from my 80 metre log. There are several stations operating in Albury, which is just 35 miles from here. In the main, their transmitters and antennae are entirely different, and consequently their signals vary from one another. Now if these stations are overseas DX, their signals would vary just the same, and yet a comparative report to any of these chaps would be of little benefit as their rigs are so different. However, comparative reports are of interest when dealing with v.h.f. signals.

Endeavour to pin point your locality (QTH). There is little point in telling the overseas station that your QTH is Woormargama, for one thing he has never heard of it, and another is that he will not find it on any map which he is likely to have. But tell him you live in a small town some 350 miles S.S.W. of Sydney and he will know at once from where the report has emanated. The ideal system of course is the outline of either your State or even the coastline of Australia printed on your card with your locality pin pointed, similar to that used in a very well known line of American QSL cards.

Many thanks to Maurice Cox for his assistance in preparation of this article, which is intended mainly for the many newcomers to short wave listening, and I ask for forbearance from those old staggers for all this may seem ancient history. Remember, however, that we all started once and a little guidance in the early stages would have helped us no end.

To any newcomers who have any queries on this subject, I would like to have you contact us. In VK2 a note to Barney Smythe, W1A-L2001, or in VK3 to Laurie Cox, will bring you the information required in a very short time. Both addresses are in the W.I.A. Call Book, obtainable from your Division at 6/- per copy. Any queries on the subject of broadcast reporting and allied subjects can be obtained from Gerry Albeck, W1A-L2011.

—D. Grantley, W1A-L2022

★

T.V. PERMITS GRANTED

VK—
20S/T—S. Hancock, 16 Tedman Pde., Sylvania.
2VO/T—V. Molesworth, 87 Jersey Rd., Woolahra.
3AIG/T—A. Freeman, 10 Riversdale Rd., Chitwell.

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| Model 6a 3/32" (Push-on) | 6 | 6 | 0.25 oz. | 6" | As for Model 6 (for extremely delicate work only). |
| Model 9 5/32" (Push-on) | 6, 12, 24-27½ | 8.3 | 0.25 oz. | 6" | Hearing Aids, Radio and TV Sub-assemblies, Coils, Electronic Instruments, Model Construction, Electro-Medical, etc. |
| Model 12 3/16" (Push-on) | 6, 12, 24-27½ | 12 | 0.5 oz. | 6.25" | Radio, Television, and Telecommunications assemblies. |
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MS P3.58

FEEDBACK

Today we read of the various disruptive elements within our society, and Amateur Radio is no exception. During the past months it has been most noticeable that the Sunday WI broadcasts have been made with a heretofore beat from an unknown station or stations. It is very difficult to establish if Amateurs are to blame or if this interference is due to sources outside the Amateur Service, but if Australian Amateurs are causing this interference then they can be classed with every other form of noncommunity service, and should be expelled from the Amateur ranks.

Not everyone listens to the WI broadcasts, but these Sunday sessions are a valuable means of telling people what is happening and are part of the Amateur communication network. Therefore it is every Amateur's duty to ensure that the official WI Sunday broadcasts are made on a channel free from interference and this includes driving a v.f.o. at full power across the band. Keep the Sunday WI official broadcasts free of interference.

The co-editors are to be congratulated upon adding a new column in "A.R.," namely s.s.b. This was long overdue and in conjunction with the DX, S.w.l. V.h.f. and Divisional Notes provides a balanced report of Amateur activities, but there is one exception.

No doubt the co-editors would have noticed this exception if they were not so busy editing or whatever they do. (Noticed that they published a par which stated that the "Geloso" receiver was made by the "Heath" Co. Apparently they do not read every article). The exception is—Federal Executive reports. It is granted that F.E. are too busy, are overworked, and have just not the time available to furnish a regular monthly report, but who in the xcxf has as this column is written in time that is not available. So it is suggested that as "A.R." now presents a balanced (?) account of Amateur activities, F.E. should maintain that balance by reporting to the readers each month. No doubt the co-editors could make space available, as they are appealing for articles. Oh well, maybe this will be the last issue of this column as only the good are censored early and have pansies at their service.

Suggest that a well known supplier learns that an "A" after a serial number denotes a change. This would help many when assembling the unit, because now the thing won't work according to dial.

Progress — Publicity — Public Relations.

The Australian Call Book is strange title for a W.I.A. publication methinks.

Have you ever heard of Snow in Fiji? I have.

73.

[Lucky we don't read every article or this would not be published.—Editors.]

TRADE REVIEW

R.C.A. VOLT-OHM-MILLIAMMETER

Amalgamated Wireless (A/sia) Ltd. have announced details of the new R.C.A. 38A multimeter kit which is shown in the accompanying illustration. The kit features low weight (3½ lbs.), compactness, printed circuits, sensitivity, wide range and a space for housing the test probes which are supplied.

The d.c. volt ranges cover from 4v. to 5kv. full scale at 20K ohms/volt, and the inclusion of the two low voltage ranges will assist when working upon transistor circuits. The current ranges cover from 50 μ A. to 10 amps., and the ohm ranges measure to 20 megohms at 7½ volts.

A.C. volts at 5K ohms/volt cover from 2.5v. to 5kv., and separate ranges cover a.f. volts to 250v., and decibels to +50 db. The A.C. ranges have a flat (± 3 db.) response from 10 c/s. to 50 kc., are useful for hi-fi work.



The accuracy is within accepted commercial tolerances, namely: $\pm 3\%$ d.c., $\pm 5\%$ a.c., $\pm 3\%$ mid scale ohms ranges, $\pm 3\%$ d.c. current, and $\pm 5\%$ a.f. volts.

The unit is housed in an attractive bakelite case (with recessed lettering so that it will not rub off in use), the dimensions are 5½" x 6" x 3", and the meter movement (50 μ A.) is encased in a clear plastic which permits easy reading of the five dial scales.

The unit would be a very useful adjunct to any service bench or well equipped Amateur shack. Further details are available from A.W.A. Ltd., 47 York St., Sydney, or Queen St., Melbourne, who can also supply a completely wired and tested unit for those who do not wish to assemble their own kits. Prices: ex Sydney, factory built meter, £24/10/0 plus tax; kit of parts, £18 plus tax.

COPY DATE—8th

Correspondents are reminded that copy for this journal must be in our hands by the 8th of the month. This does not mean that you post it on that date; it must be in our box by then, or better still, prior to that date.

BOOK REVIEW

"S9 SIGNALS"

Written by William Orr, W6SAI/3A2AF

This inexpensive publication will assist the s.w.l. and transmitting Amateur to get the greatest benefit from a series of antennas which cost little and perform well. The booklet is well written and liberally sprinkled with illustrations. It is recommended as a useful addition to the library of any Amateur.

Our copy from: McGill's Authorised Newsagency, 183-185 Elizabeth St., Melbourne, C.I. Price 1/9, Postage 3d.

RADIO HAMS AMONG R.A.A.F. MEN IN MALAYA

Several members of the R.A.A.F. serving at Butterworth in Malaya devote hours of their spare time to Amateur Radio.

A. Sains, pilot, Flying Officer Ron Johnson, who formerly served with No. 1 Squadron in Malaya in 1954 as a signaller, now works his station 5M2GS from his home on Penang Is. Flying Officer Johnson, who comes from Bondi, N.S.W., serves with No. 3 Squadron.

Another Amateur, Flight Lieutenant Keith Avery, of Brisbane, Qld., has held a licence for 21 years. He has been working his radio on Penang Island and in the space of three weeks worked 100 countries, thus qualifying for membership in the "Century" Club. He said, "This is surprising because the area we work from has one of the highest noise backgrounds in the world."

Another Amateur at Butterworth is Corporal Ray Pulford, of Greensborough, Vic. Corporal Pulford has been working his radio since Dec. '56, having been an Amateur for more than eight years.

R.D. CONTEST

Is your equipment ready for the most popular Contest of the year? Remember the date, 13th and 14th August, '60. For scoring purposes only, VK5 and VK8 are combined as one call area this year. See you in the Contest?

YOUR STATION COMPANION, the . . .

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The improved version of the ARS5 and ARS5A Exciters is now available. Although the circuit remains almost unchanged, the unit now comes to you in an all-steel cabinet with an additional tuning control in the mixer circuit of the ARS5A unit, thus permitting a choice of both Low and High "Z" outputs.

ARS5 comprises the following: 12AT7 audio, 1/2 12AU7 driver to "Aswel" audio p.s.n., 1/2 12AU7 xtal oscillator, 12AT7 audio amp., 2 x 6AL5 diode B./Modulators, 6BA6 Class A output stage.

ARS5A: Similar to above except that a 6BE6 mixer stage is included in place of the 6BA6 linear, switchband 80-10 mc.

Both units feature Selectable Sidebands and P.M. positions.

Price: ARS5, £26/10/0; ARS5A, £28/10/0 (both less valves).

Quotes gladly given on any custom-built equipment, be it S.S.B., A.M., or associated equipment.

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7 Mc. Mobile Meeting at Bringelly

CORRESPONDENCE

A meeting of some of the 7 Mc. mobile VK2 gang was held near Bringelly on Sunday, 12th June. Perfect weather was turned on and the spot chosen for the meeting seemed to meet with general approval.

After several mobile/"base" and mobile/mobile QSOs, 11 cars with waving whips assembled, together with three cars not yet fitted up (but with intentions). Altogether 17 Hams, with

their XYLs and harmonics, were present; about 50 persons.

The usual greetings over, everyone got busy on the barbecue, rig inspections, note swapping, etc.

Hams present were: VKs 2ALR/M, 2SW/M, 2SG/M, 2WJ/M, 2CR/M, 2CK/M, 2HR/M, 2CE/M, 2SV/M, 2VL/M, 2ADA/M, 2ACV, 2APQ, 2ZO, 2AAC, 2ACW, 2PK.



Group of Amateurs at the 7 Mc. Mobile Field Day at Bringelly on 12/6/60.

Back Row (left to right): VKs 2SV, 2APQ, 2ALR, John, 2AAC, 2HR, 2CE.

Front Row (left to right): VKs 2ACV, 2CK, 2VL, 2SG, 2CR, Dick, 2SW, Ron.

Photo by John 2WJ.

HOW TO WIN THE S.W.L. RD. CONTEST

Contest season is upon us again, and Peter Carter's letter in the s.w.l. page of June "A.R." prompts me to forward a few comments which may help the newcomer in the Contest field to match his wits against the old few whose names appear regularly in the result list of this very popular event.

"I wouldn't know where to start" is a popular answer to a request for a new member to enter the R.D. Contest, and it is obvious from correspondence received here in my capacity as Amateur Advisor to the VK2 S.W.L. Group that many would-be entrants just haven't a clue what it's all about.

The Contest is in memory of the Amateurs who gave their lives in the last War, and the idea is for as many licensed Amateurs in a given State to contact their counterparts in other States. The stations exchange a serial number, consisting of five figures in the case of phone operation, and six in the case of c.w. The serial number consists of the signal report, plus three figures which increase by one for each contact. Our task as listeners is to log as many transmissions, including station calling, station heard, and number sent, but we cannot log or claim points for transmissions within our own State. We can, however, claim points for a station answering one within our State.

Full scoring is given in June "A.R." together with rules of the event. These are easily followed, but if the would-be contestant is in any doubt, he should contact one of the contest regulars in his State, who will put him on the right track. If you are able to enter do so, even if you log only a dozen calls. It is not hard to do and your action will be appreciated by those who are striving to keep the S.W.L. Groups moving along.

But maybe there is a newcomer somewhere who will try and win the event. Here are a few pointers from this operator, who has had some success in the event of late. Firstly, if you want to win, your equipment must cover all the h.f. bands, and if possible the two major v.h.f. bands, for bonus points are available to entrants on these frequencies. Time is of paramount importance. It is advisable to log for as long a period as possible—the entire 24 hours if possible. Secondly, forget those soft pencils, get two or three Sifs, these are hard, and if sharpened to a fine point prior to the event, they will see the 24 hours out without wasted time in sharpening. Ball point pens are not the ideal thing for logging over long periods; this I discovered in the '57 event.

The W.I.A. standard log sheet, which is available for contests, is the best log available; paper is suitable for a hard pencil, and they are ruled to suit the rx section as well as the other. To save time in ascertaining if a station has been logged before, it is advisable to have a record of some sort. An old call book can be used, marking a station with a distinctive mark for each band, but I prefer to have several sheets of foolscap, lined, and ruled into five columns, one for each band, and one sheet for each call area. Upon logging of a station, his call can be entered on the sheet, and as the event progresses you can tell at a glance if that station has been logged on that band before.

Listen carefully to each contact. If you miss the serial number when sent, chances are that the station on the other end has done likewise and will ask for a repeat, or maybe he will repeat it and ask for verification. Thus you have another chance at logging the number.

In the small hours when activity slackens on 40 and 80 mc, it is possible to run a rx on each of these bands with a single earphone connected to each set, and mounted on a single headband enabling you to monitor both bands with little trouble. Earphones are preferable for contest operation as they keep most distractions out of earshot.

The event is not easy to win, but with careful operating, and attention to small details, any reasonable operator has a chance. I find it unwise to lose a single point in hopes of logging a station who will give a higher score, for you will doubtless score him later on. In other words, take everything that comes your way and keep your nose down to it. Then you may have a chance of defeating our Mr. de Balfour of VK7 whose reputation in the R.D. is almost as great as BERS-195 when there is a new country about.

—Don Grantley, L3068.

★

INTERMEDIATE FREQUENCIES OF SOME DISPOSALS RECEIVERS

| | |
|----------------|----------------|
| 1132, 1132A .. | 12 Mc., 75 Kc. |
| 1155 | 580 Kc. |
| 1124A | 7 Mc. |
| RA10D | 1630 Kc. |
| MN26C | 112 Kc. |

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publishers.

CESSATION NOT DUE TO APATHY

Editor "A.R." Dear Sir,
I note with interest your reference to pre-war (1939) v.h.f. activity in the current issue of "Amateur Radio".

I regret deeply since those days the necessity for my cessation in participation of Amateur Radio.

The reason is not in any way due to apathy but because of my being unable to overcome the incurable illness which has beset me since 1954.

However, the pages of "Amateur Radio" bring me much pleasure each month, and I take this opportunity of wishing the Institute every prosperity in what looks like a battle for frequencies in the near future. Please excuse my shaky handwriting. It is difficult to write, and the typewriter has become a formidable obstacle.

—Don B. Knock.

FIELD DAYS

Editor "A.R." Dear Sir,
There have been comments by the Institute on various occasions that the Field Days are not very well patronised. It is most noticeable however, that the publicity given to this Contest, both before and after the event, has not been desired. The Remembrance Day Contest is well publicised which is very commendable; should not the Field Days receive at least equal publicity?

Most Amateurs who have taken part in a Field Day will agree that a lot of effort is put into the organising, etc., of the station for and during the Contest, and as a result a good (?) time is had by all. It is realised that unless a club station has a special call, the station is under the call of the single operator whose call sign was used. In many cases, the stations are set up by a number of Amateurs, of whom only one is permitted to operate.

During the last Field Day, our club organised a station, and although it was carefully mentioned on each log sheet, no reference was made to it in the results.

Surely a mention of the group concerned would not be out of place, even though the certificate does not mention the club name.

Members of our club were all disappointed at the club (or any other for that matter) not receiving a mention, and feel that more publicity would encourage more clubs and groups to participate even though a club call was not obtained.

Field Days are good fun, and hard work—so let's have publicity in the magazine equal to the occasion!

—R. A. Catmur, VK3FY, Hon. Sec., Elizabeth Amateur Radio Club.

EQUIPMENT STOLEN

Editor "A.R." Dear Sir,
On 25th May last the radio room, built in at the rear of my home at 93 Yurrab Ave., Balwyn, E.S. Vic., was burgled, and at the same time the camera of my 35mm. Leica was informing you of the details with the request that it be published in "Amateur Radio".

The police have suggested that the burglar be given to the better the better; at the same time, I feel that a warning could well be passed on to other Hams.

My radio room was very thoroughly locked, but the thieves somehow managed to choose an occasion (between the hours of 5 p.m. and 11 p.m.) when everybody was out, including the people next door. They went straight around the back to the shack, showing no interest whatsoever in any other part of the house. Only certain selected items of receiving equipment were stolen; while it seems clear that the burglar had a knowledge of and interest in radio, it is probable that he was completely ignored all the transmitting gear. For this and other reasons, I do not believe that any member of the Ham fraternity was involved.

The equipment stolen included one BC346Q receiver with separate plug-in loudspeaker; one ham-made "Monimatch"; one "Magnecore", professional-type tape recorder; one "Serviscope" cathode ray oscilloscope; one "Heathkit" vacuum tube voltmeter; one "Sanwa" multi-meter; one P.M.G.-style telephone handset of U.S. disposals origin; one Bendix frequency meter, less case but with separate home-made power supply; and one "Globe" home-made run. Any of you readers, who hear of equipment that could be in the above list, are requested to contact the C.I.B. at the Camberwell, Vic., Police Station, or my home at above address.

—Alan H. Reid, VK3AHR.

AMATEUR CALL SIGNS

AMENDMENTS FOR APRIL '60

NEW CALL SIGNS

VK— Australian Capital Territory
1ZDG—D. R. Gothard, 5 McDonnell St., Yarralumla.

New South Wales
2BS—J. W. Stander, 297a Housing Settlement, Bradfield Park.

2CA—R. M. Harnett, O.T.C. Receiving Station (Radio), Bringley.
2RG—J. H. Jones, 222 Carrington Ave., Hurstville.

2AFW—G. H. Martin, 101 Birrell St., Waverley.
2AFH—W. C. H. Haynes, 54 Mt. Lewis Ave., Punchbowl.

2ZDH—J. Dyer, 42 Cardigan St., Guildford.
2ZKA—K. W. Andrews, 1 Clarence St., Burwood.

2ZMM—M. M. Stewart, 10 Alice St., Jannall.
2ZOH—O. L. Holmwood, 47 Boronia Ave., Cheltenham.

2ZRP—P. Parion, 16 Renown Ave., Oatley.
Victoria

3FX—P. Furr, 106 Korolit St., Warrnambool.
3AAO—J. B. O'Hara, 2 Lynden Gr., Mt. Waverley.

3AFW—F. R. Williams, 62 Watlie Valley Rd., Canterbury.
3ASG—J. W. Brown, 19 Emerald St., Preston.

3ZHI—R. L. Moncur, 235 Union Rd., Ascot Vale.
3ZHN—A. C. Martin, 104 Thames St., Box Hill.
3ZHO—M. D. Kennedy, 58 Weddell St., Shepparton.

3ZHP—W. F. Moroney, 28 Smith St., West Brunswick.
3ZJG—G. J. Merrill, 11 Roberts Court, Moorabbin.

3ZJI—P. R. Gilbert, 75 Broadway, Bon Beach.
Queensland

4LH—L. W. Hoobin, Sunset Boulevard, Surfers Paradise.
4SQ—S. S. Silver, O.T.C. Radio Station, Thursday Island.

South Australia
5CN—R. A. Beavis, 30 Pulford Rd., Prospect.
5NH—D. R. Cutten, Station: 142 Ward St., Nth. Adelaide; Postal: Bag 11, Victor Harbour.

5EV—J. J. Mount, 7 Donnington Rd., Elizabeth North.
5HY—A. A. Cotton, 22 Garland Ave., Kilburn.

5PE—C. M. Pearson, 553 Main North Rd., Elizabeth North.
5ZCL—P. T. Leatham, 30 Langford Ter., Salisbury North.

5ZDM—I. N. Cousins, 3 Woottona Ter., St. George's.
5ZDU—A. G. D. Landers, 78 Grant Ave., Rose Park.

Western Australia
6FG—F. G. Clinch, Milng.
6RE—R. R. Elkin, 112 Beach St., Fremantle.

6ZCK—H. N. Hughes, 314 Churchill Ave., Subiaco.
6ZCU—E. Hanham, 4 Frederick St., Albany.

Tasmania
7ZAX—P. L. Corby, 44 Congress St., South Hobart.

Territory of Papua and New Guinea
9GR—Goroka Radio Club, C/o. Secretary, P.O., Goroka.

Antarctica
0DM—D. V. Monks, Mawson.
0ID—J. E. Douglas, Davis.

0NL—N. R. Barratt, Davis.
0RL—R. G. Levick, Macquarie Island.

CHANGES OF ADDRESS

New South Wales
2SV—T. Preece, Sublime Point, Leura.
2SJ—G. A. Cliphams, 17 Reservoir St., Port Kembla.

2SV—S. H. Weston, 1a Park Ave., Roseville.
2XO—J. M. Retaillick, "Do Me," Pacific Highway, Urunga.

2YA—R. C. Black, 21 Bardwell Rd., Bardwell Park.
2AKW—G. Humphrey, 27 Stanley St., St. Ives.

2ANN—D. W. Morris, Lot 32, Fuller St., Colaroy Plateau.
2AUG—E. B. Gillis, 115 Donald St., Hurstville.

2ZQA—L. W. Cook, 22 Leitchhardt St., Seven Hills.
2ZGS—J. J. Sullivan, Flat 1, 14 Palmerston Ave., Waverley.

Victoria
3US—G. M. Chilver (Mrs.), 20 Smith St., Leon-gathia.
3UW—R. B. Wallace, 17 Gilbert St., Wodonga.

3VL—R. M. Churchward, Station: Quinn St., Numurkah; Postal: P.O. Box 73, Numurkah.

3VR—J. H. Dexter, 34 Mt. View Ave., Parkdale.
3VY—J. G. Wallace, Mill St., Bendigo.
3ADI—D. G. Turner, 36 Taurus St., North Balwyn.

3AKF—K. J. Lloyd, 49 Bennett St., Forest Hill.
3AMN/T—J. D. McNabb, 11 Paton Rd., Boronia.
3ZES—H. J. Simmons, 37 Melville St., Numurkah.

3ZIA—R. C. Asberli, 208 Waterdale Rd., Ivanhoe.
3ZJS—D. A. Stewart, 43 Tennyson St., Elwood.

Queensland
4EL—E. J. Lake, 17 Stanton St., Belgian Gardens, Townsville.
4HC—H. E. Clem, 7 Molloy St., Silkstone, Ipswich.

4ZAZ—J. L. Bickford, 22 Mansfield St., Rockhampton.
4ZBJ—J. M. Burton, 19 Herberton Rd., Ather-ton.

4ZCK—R. W. J. Hazell, 11 Vale St., Red Hill, Brisbane.
4ZCL—C. C. Bunn, Flat 2, 224 Murray St., Rockhampton.

South Australia
5TS—Metro Radio Club, 96 Henley Beach Rd., Mile End.

Northern Territory
5PL—J. G. Porter, Station: 1 Blake St., Darwin; Postal: Group Engineer, P.M.G. Dept., Darwin.

Western Australia
6FA—R. F. Ager, 26 Wynyard Way, Thornlie.

(Continued on Page 17)

THE PUBLIC



SERVICE OF

PAPUA AND NEW GUINEA

RADIO TECHNICIANS

Senior Radio Technician

(several positions)

£1,584-£1,660 p.a. (single)

£1,734-£1,810 p.a. (married)

(actual rates)

Qualifications: Qualified as P.M.G. Senior Technician (Radio) or equivalent.

Duties: In charge transmitting and receiving stations; V.H.F., M.F./H.F., C.W. and radio-telephone trunk and out-station services.

Radio Technician

(several positions)

£1,354-£1,485 p.a. (single)

£1,504-£1,635 p.a. (married)

(actual rates)

Qualifications: Qualified as P.M.G. Technician (Radio) or equivalent.

Duties: Assist in maintenance and installation communications, transmitters and receivers V.H.F., M.F./H.F.

Appointment: Permanent or fixed term appointment. Officers of Commonwealth Public Service will be considered for transfer pursuant to Section 43 of Public Service Act for period of up to two years in first instance.

Accommodation: Single quarters available; married accommodation unlikely to be available under 18 months from date of appointment.

Separation Allowance: Payable at discretion of Territory Administration; designed to compensate for added expense of married appointees obliged to maintain family outside Territory.

Child Allowance: For first dependent child under 16 years — £52 p.a. For subsequent dependent children under 16 years — £65 p.a. All officers receiving adult male rates of salary are required to contribute £26 p.a. towards cost of allowance.

Leave: Three months after each 21 months in Territory and 6 months' furlough after 20 years. If permanent, additional 3 months' leave after each 6 years.

Further Information: An information handbook on the Territory and its Public Service is available from Department of Territories, Canberra or Sydney, or from any Commonwealth Public Service Inspector, Commonwealth Employment Office or official country Post Office. Other enquiries to Department of Territories, Canberra (phone 7-0411, ext. 29A).

APPLICATIONS

SUBMIT on prescribed form available from above offices —

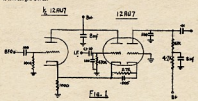
TO — The Secretary, Department of Territories, Canberra,

SIDE BAND

Bud Pounsett, VK2AQJ
22 Seiffert Centre,
Queanbeyan, N.S.W.

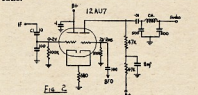
PRODUCT DETECTORS

The product detector has been gaining favour among Amateurs interested in obtaining better reception of s.s.b. signals and, incidentally, c.w. properly adjusted product detector makes for a cleaner signal in the output of the receiver and less manipulation of the gain controls, but it is not the end-all to sideband reception. Many Amateurs have been led to believe that this detector makes some magical difference to a receiver enabling them to tune s.b. signals with the greatest of ease. Even though it does effect considerable improvement in the receiver, it does not remedy sloppy tuning mechanisms or make up for lack of bandspread.



Here are a number of product detector circuits which will give good results. There is a wide difference of opinion on just which is the best. The circuit of Fig. 1 was first described by Murray Crosby, W2C5Y, in "QST," May 1956, and analysed rather fully by Dan Healey, W1EFC, in "QST," Dec. 1957. Both these articles were reprinted in the second edition of "Single Sideband for the Radio Amateur." For optimum results, use 2 volts r.m.s. input from the b.f.o. and a maximum of 0.2 volt r.m.s. from the i.f. channel. Although this circuit requires two tube sockets, it does not require a complex filter in the output to eliminate the b.f.o. feed-through. At the lower intermediate frequencies this is a problem with some product detectors causing overloading of the first audio amplifier.

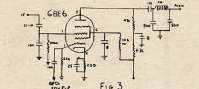
Fig. 2 shows a product detector that has been used by many Amateurs—largely without success. This has been brought about by failure to attend to proper input levels at both grids and to provide for the attenuation of b.f.o. feed-through. The filter in the output of the detector can be used to accomplish two important functions. It will eliminate the b.f.o. signal and, with a cut-off frequency of 3 kc., can shape the audio response of the receiver, giving an increase in the overall signal-to-noise ratio.



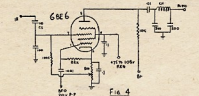
Receiver converter tubes can be used very successfully. Fig. 3 shows a simple application of the 6BE6 tube. This circuit needs little explanation as it follows normal frequency conversion techniques. However, the circuit of Fig. 4 is a little different. This allows for the reduction of intermodulation distortion and was published by Ekstrom, W2UGX/3, in the May 1959 issue of "QST." He advises that adjustment of the circuit can be made with the aid of an oscilloscope and two audio signals at about 5 kc. and half a volt in magnitude. The two signals, differing by 500 c.p.s., are applied to the signal grid and the 500 ohm potentiometer is adjusted for minimum difference frequency component (500 c.p.s.). A low pass filter is recommended at low intermediate frequencies.

Owners of the popular Qer, BC453, receiver will be interested in the product detector (Fig.

5) used by VK3NT. Norm reports that this circuit is very successful. The 12K10 or 6BK8 tube can be used here depending on the other tubes that are in your receiver. Again attenuation of the b.f.o. signal must be obtained for optimum results.



In order to arrive at the proper input level from the i.f. channel the following procedure may be found helpful. Tune to a strong station, a b.c. station is a good choice, and try various values of C1, so that there is no output from the receiver with the b.f.o. switched off. Any output under these conditions means that the detector is being overloaded and results in high distortion even when the b.f.o. is switched on again. Of course, a v.t.v.m. with an r.f. probe is the best tool for this job but remember that when measuring the i.f. channel output at the signal grid do so with a very strong signal and the r.f. gain at maximum.



Here's wishing you better sideband reception and, if you do, let us know your station and metre radio telephone will surely put you in touch with a sidebander who will be pleased to help.

GENERAL

New York City is the headquarters of the S.S.B. Amateur Radio Association but this does not prevent any interested VK Amateur from joining. The Association publishes a monthly journal which is packed with sideband doings, DX news and technical information. The annual subscription is \$3 (U.S.). Interested Amateurs may write to VK2AQJ for additional gear, plus a sample copy of "The Sidebander" and a membership blank or you can write direct to the S.S.B. A.R.A., 12 Elm St., Lynbrook, N.Y., U.S.A. The S.S.B. A.R.A. is an organization dedicated to furthering s.s.b.

Glenbrook, in the Blue Mountains (VK2) has quite an Amateur population and one of the outstanding signals is that from 2Q 2AU, ex-3TU, a c.w. operator of many years' experience, has found that his phasing rig on 40 metres has added much enjoyment to his Amateur activities. Voice control operation really sold him on the excellence of s.b. transmission. Col's tx generator the sideband on 8.5 Mc. The v.f.o. covers 5.45 to 5.6 Mc. and this is combined with a 3.8 Mc. xtal oscillator to produce 1.5 to 1.9 Mc. which, mixed with 8.5 Mc., results in output in the 40 metre band. The v.f.o. stability is very good and seems to be one way of dodging the troubles caused by tripling the v.f.o. to 15 Mc. or so. Col is very active and if you are interested in his method of attaining frequency stability be sure to call him, give him your home address and that 893 in the final makes sure that you will.

If you require plenty of capacity to maintain good plate supply regulation a simple way out is to follow VK3JJ's example by purchasing several 120 uF 475V. type ECSEB capacitors that are now available. The idea is to arrange

them in series-parallel until you have the desired capacity and voltage rating. Remember to place the series voltage dividers across the capacitors. Jim has his connected to give 60 uF at 2,000 volts in a space 9 x 9 x 5 1/2 inches. This must be one of the reasons why those 811As produce such a quality signal, easily one of the best on the bands.

It is pleasing to hear a couple of Amateurs of long-standing leaving their cards behind. Percy VK3OZ and Tim VK3TW have both been using s.b. and have excellent signals. 1680s are in the balanced modulator at 30Z while 6160s perform very well from Hamilton. My guess is that s.s.b. will be heard from both these stations before very long.

May I offer my thanks to you who have sent me information, either by mail or over the air. Also to those who have shown interest and made suggestions. Keep up the support and our sideband notes will continue to grow. Watch out next month for a c.r.o. monitor that you can build into your linear amplifier.

MAGAZINE EXTRACTS

"Short Wave Magazine," May '60
Pi Section Interstage Coupling.—Pi section networks in tx stage before the p.a. Discussion with circuit showing how high interstage efficiency and harmonics can be achieved. Discussion centres around 8AG7 and 5763 tubes in the exciter.

Making Wide Band Couplers—Design and construction data.

"CQ," June '60
Improvements on the Selectoject.—In this slightly improved form, the S.O.J. offers choice of adjustable "strategic" amplification, tunable single frequency rejection, or tunable single frequency excitation.

Better V.F.O. Stability.—465 odd c.p.s. across 5 turns on half inch diam. former. This high C. Colpitts oscillator is extremely stable. The coupling making it change frequency is the tuning dial.

RE-ECHO FROM MACQUARIE

The following is an extract from "Short Wave Magazine," June 1956—
On 24 March 1956, the March issue, we mentioned that the first radio station in Antarctic regions—though not, strictly speaking, within the Antarctic circle—was established on Macquarie Island (65° south) by Sir Douglas Mawson as far back as 1911. The interesting thing is that we hear (from VK2NO) that one of Mawson's original operators, Wal Hannan, is VK2AXH, still going strong at the age of 74, and happily active on 80, 40 and 20 metre phone bands. What a magnificent record. The KC4 boys of today have nothing on this, though Eyrd did start in the Antarctic in 1929, with Amateur Radio as his sole link with the outside world."

AMATEUR CALL SIGNS

(Continued from Page 16)

- 6KS/T—T. Storer, 13 St. Michael's Ter., Mt. Pleasant.
- 6ZAS—S. J. Stewart, 95 Railway Pde., Mt. Lawley.
- 6ZBR—S. J. Brewster, 61 Golf View St., Mt. Yokine.
- 6ZCE—K. Kosina, Flat 5, Block 130, Terrace Drive, Perth.
- Tasmania
- 7JP—L. J. Durkin, 14 Pleasant St., Burnie.

CANCELLED CALL SIGNS

- VK—
- 2BM—H. F. Trehan.
- 2AIX—R. M. Harnett (now VK2CA).
- 2AOT—Tasmanian Radio & Electronics Club.
- 3PE—R. R. Elkin (now 3GGR).
- 3ZAF—P. Furr (now VK3FX).
- 3ZDW—F. R. Williams (now VK3AFW).
- 4EY—J. F. Meahan.
- 4XY—L. J. McGarry.
- 5SK—S. S. George.
- 7JP—J. J. Durkin.
- 6AF—A. S. Flett.
- 6AW—W. W. Sawert.
- 6CC—C. J. Cooke (now VK4CC).
- 6EM—E. L. Macklin.
- 6HA—H. W. Alderice.
- 6HV—V. J. Doherty.
- 6MC—M. J. Cosgrove.
- 6OH—R. L. Harvey.
- 6RT—R. M. Forckler.
- 6TV—T. J. Van Hullen.
- 6VH—F. A. Van Hullen.



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SAVE with **HEATHKITS**

**Electronic Equipment
for HALF the cost**

So easy to build, thanks to the
step-by-step Heathkit procedure
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BUILD YOUR OWN TRANSISTOR PORTABLE IN FIVE HOURS

HEATHKIT MODEL UXR-1

6 Transistors; Dual Wave Portable Radio

Superbly styled in a beautiful solid leather case with large, easy-to-read dial, the model UXR-1 is acknowledged to be one of the most attractive portable radios ever designed.

Printed circuit board makes construction simple and quick. Illustrated Heathkit "Step-by-Step" procedure enables even a beginner to do a first-class job. Large pictorials and detailed instructions in simple language show clearly just where every part goes. This is a powerful set with exceptionally clear reception. Small (only 9 1/4" long x 7 1/4" high x 3 1/4" deep), light and completely self-contained. Features six top-quality transistors; high-Q Ferrite rod built-in aerial, 7" x 4" high flux elliptical speaker.

Price: £27 plus 25% S.T.



HEATHKIT O-12

5-inch OSCILLOSCOPE

VERTICAL CHANNEL

Sensitivity: 0.025 volts (r.m.s.) per inch at 1 kc.
Frequency Response: Flat within plus or minus 1 db. from 8 c.p.s. to 2.5 Mc. Flat plus 1.5 to minus 5 db. from 3 c.p.s. to 5 Mc. Response at 3.58 Mc., minus 2.2 db. (All response measurements referred to 1 kc.)
Rise time: 0.06 microseconds or less.
Overshoot: 10% or less.

HORIZONTAL CHANNEL

Sensitivity: 0.3 volts (r.m.s.) per inch at 1 kc.
Frequency Response: Flat within plus or minus 1 db. 1 c.p.s. to 200 kc. Flat within plus or minus 3 db. 1 c.p.s. to 400 kc.
Attenuator: Low impedance type in cathode follower output.
Input Characteristics: Selector switch permits use of external input through panel terminal, line-frequency sweep of variable phase or internal sweep from sweep generator.
Horizontal Positioning: D.C. type; permits wide range of positioning to examine any part of trace even with full horizontal gain.

Price: £62/10/0 plus 12 1/2% S.T.



HEATHKIT V-7A

World's Largest Selling V.T.V.M. KIT

Specifications: D.C. Volts: 7 ranges 0-1.5 to 0-1,500. Input Resistance: 11 megohms. Sensitivity: 7,233.333 ohms per volt on 1.5v. range. Accuracy plus or minus 3% full scale.

A.C. Volts: 7 r.m.s. ranges 0-1.5 to 0-1,500.

Frequency response (5v. range): Plus or minus 1 db. 42 c.p.s. to 7.2 Mc. Accuracy plus or minus 5% full scale. Seven peak-to-peak ranges 0-4 to 0-4,000.

Resistance: Seven ranges measures 0.1 ohms to 1,000 megohms with internal battery.

Size: 7 1/2" x 4-11/16" x 4 1/2" inches.

Price: £27/10/0 plus 12 1/2% S.T.



HEATHKIT C-3

CONDENSER CHECKER KIT

Check unknown condenser and resistor values quickly and accurately as well as their operating characteristics with this fine instrument. Capacity measurements are made in four ranges: 0.0001 mfd.-0.005 mfd.; 0.001 mfd.-0.5 mfd.; 0.1 mfd.-50 mfd.; and 20 mfd.-1,000 mfd. Measures resistance from 100 ohms to 5 megohms in two ranges. All values read directly on the calibrated scale. An electron beam "eye" tube indicates balance and leakage. Leakage test provides switch selection of five test voltages, 25 volts to 450 volts D.C. Spring return test switch eliminates shock hazard to operator by automatically discharging condenser after test. For safety of operation the circuit is entirely transformer operated.

Price: £16/4/8 plus 12 1/2% S.T.

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QLD.: 233 ELIZABETH ST., BRISBANE, 31-2081

DX

John C. Pinnell, VK2ZR
15 Summit Avenue,
Earlwood, N.S.W.
Phone: UW 4268.

The cycle of years of easy "good DX" seems to be drawing to a close and if the sunspots run true to form, next year will be the first of three really bad years. Incoming reports on statistics worked and heard are including very much smaller lists than they did this time last year. Also, reports received are gradually shrinking in number which makes it much more difficult for me to compile these notes.

Last month I was not as active as I have been in the past, but did manage to make 173 DX contacts. Operating was confined to 14 and 21 Mc. c.w. 74 Europeans were included in this score. The 21 Mc. band seemed to be neglected, for many times plenty of American Novices could be heard and some worked, yet, not another signal could be found.

Band conditions are changing and over the next three or four years, 7 and 3.5 Mc. should become more effective for DX work. Even now quite a few Europeans, on 7 Mc. are breaking through with fair strength. Several 3.5 Mc. signals from Europe have been reported. Don Chesser, W4LFX, has been in business again with his excellent DX Bulletin. You will remember he was back of my printing gear and equipment destroyed by fire several months ago. He was very generous in giving help with DX matters to this page and W.I.A. activities. We wish him well.

NEWS AND NOTES

KG6ICD, on Marcus Island, was very active during the last two weeks of June. It is understood that a new country station is assured. W7FHO is handling the QSLs for VK3BIB and VK3QO will be to the Northern Territory (VK3) for the first two weeks of September. They will be using c.w. only and would like to make as many contacts as possible. Any authorization for a VK3 call sign is given, they should have a busy time. Ex-VK3TF is now VK3TF in Darwin.

For those who missed XE4, Carlos, XE1CV informs me that he has been in position from Socorro in the near future. (KELAS)

PK1PFF, the Andorra DX position, was set for July 10 to 13, and QSLs should be sent via D.A.R.C. P.O. Munich 27, or direct to DL1PFF via a S.A.S.E. and logs in G.M.T.

VR1A should be active any time now on 20, 21 and 24 Mc. c.w. He expects to be on the air quite a lot.

AC3NC and VU2KV/AC3 are both active from Sukkum. They are on 14 Mc. c.w. and have been heard between 1430 and 1700.

UA0BQ is on Wrangel Island and is operating c.w. in the 14 Mc. band.

JA2JF is fairly active around 1600-1700 on 14 Mc. c.w.

JA2JF is fairly active from Campbell Island on the 3.5 Mc. band. Only been heard using phone.

VK2AGH and VK2QL had a sked with DL1FF on 3.5 Mc. c.w. last Sunday at 2600Z. He was coming into Sydney at 56 but due to conditions at his end was unable to copy either of the VKs.

Due to the new status of several countries in Africa a bunch of new prefixes are being handed out. Belgium Congo was OQ5 and OQ6, but is now QG5. British Somaliland was QG6, now there are more to follow.

YS10, Salvador, has been worked by several VKs over the past two or three years, but did not seem to be interested in QSLing. Things have changed and now quite a few cards are coming through. If you need his card it might be worth trying again.

UC3KAR and UC3EW have been consistently on the air around 2100-2200 most mornings for several weeks. They are both on 14 Mc. c.w. Between 0630 and 0650 on 14 Mc. c.w., CN2BK and on occasional CN8, EA and I have been worked in Sydney. CN2BK QSLs go via W2CTN.

ACTIVITIES

20L Frank had some bad luck early in the month. He blew his main p.a. transformer, so had to go QRP with about 15w. input. How-

* Call signs and prefixes worked.
* zero time - GMT.

ever, he managed to work some good ones which included FB8XX, EA0AC, ELAA, and KG6ICD on 14 Mc. c.w., and VK0WH on 21 Mc. c.w. Stations heard: 14 Mc.-V80QA 1BA, HH2GR; 21 Mc.-VQ2WR, OQ5IG; 3.5 Mc.-DL1FF.

22Z: Worked 14 Mc. c.w.-CE2AG, CN2BK, CM2QN, E19Y, 14 DLs, F3AD, F8CJ, F8VQ, 17 Ga, H8YTU, I1MIL, KR6GCA, OE5SS, OK1CG, OK1PT, ON4PU, OZ7OF, PA1TAA, PA0WAC, SM6EL, SM6KY, SM6NG, SM7CZ, 8 CN8L1, UA3s, 5 UA1s, UA4NE, UA4KH, UA9WL, UA9PU, UB8KTU, UC3EW, UP2AC, VK0HB, W/Ks; 21 Mc. c.w.-CN2AL, KL7AMH, XE1P, ZSUZ, many W/Ks and VEs.

24Q: Col. is using an a.s.b. 70 watt phasing rig connected to a s.w.f. antenna only 14 ft. off the ground. He QSO'd many Ws on the 7 Mc. band including W4MZX, W3ECR and WAUCA several times, also ZL1SD and ZL1ATQ.

25Z: Ws. Edman and Dennis MABLA; KG6ICD but did not get ZL4JF. Perhaps better luck this month, Eric, as I believe he is good for a few weeks yet. Some sign heard on 7 Mc. c.w.: DL1PA, SM6CH, SM6ZV, UA3KSM, UA9D1, UC2BG, UR2DK, ZS6NE (2030Z), JA6AHV/MM; 14 Mc. c.w.: BV5HT 1230Z, FB8XX, FB8ZD, HK0AA, J20K5, JT1, IKAB, J20PC, J20PO, KC0JB, KM6BU, KG6ICD, KYEVL, VK0PM, VR1B, VS1FZ, VU2AZ, ZS2BB, ZS2TH, ZS2BZ, ZL3VB/Chatham (0750Z), ZL3RIR, KJ2DA/MM, LA7R/M, VE1NN and VE6NO.

15Z: Bud has given up farm life and moved into Albany so has not been as active as usual. Stations heard on 3.5 Mc. c.w.: DJ3BL, JA3JF, LZ1KRU, SP2RS; 7 Mc. c.w.: KH8NDY, VREIK, SP2V, SP1AFM, SL4AD, UBKED, UMRAB, YU2ACD, YU2KJ, YU2RZ, YU2V, 14 Mc. c.w.: FB8XX, CN8LO/MM, G1ARY, HA5PO, HK0AA, K4VJE, OK1LY, OR1TX, TI-C6M, U1AY, U2BG, U2CP, U2RZ, U2V, ZK1AK; Phone: EA3JE, KL7BJC, VK0PM; 28 Mc. Phone: W/Ks only.

3AOM: George found conditions on the 14 Mc. Phone band very poor. Could only hear a few North Americans in the late afternoon just before sunset. Stations worked included TICVC, VE1KT, VE5KG, VK0UM (Davis), W/Ks. 2AMB: Laurie is active on three bands. He worked G5WP, VE3BCU and VE7BCG on 7 Mc. c.w., also heard G5BKF and KP4YD, worked on 14 Mc. c.w. ZG3TA, HK0AA, UC3ON, VK3BIB, ZS1OU, ZL3VB, VS1FZ, EA0BC, heard TZ1LA, KP3W, HH2GR, EA0CB, FR1ZD, 062GT; Phone worked: FB8O, CN2BK, CN2BK, EA1GH; heard: VK0KH, HK0AA, VQ4ER, HL9TF; 21 Mc. phone worked: VR1B, KTA4VQ; heard VP1EE, VK0WH and ZK1BS.

2A0G: 3.5 Mc. Phone: ZL4JF Campbell is ZL1AWU, 14 Mc. c.w.: ZL4JF KG6ICD, FG-1XG, U1AY, DMU2DA, UP0L8 at North Pole, HB1EO/FL, 05MGT, ZS6NE, DL1FF, SASCV; 21 Mc. Phone: W/Ks. G. Graham has been very busy over the past few weeks so did not get on the air very much. I heard a whisper that he has been doing developmental work on the making of transistors which his firm will be marketing soon. Let us hope two or three types have been worked in to suit the h.f. gang.

2AQJ: This month Bud has spent most of his time on 40 and 80 mX gathering information for his s.b.s. notes so his activities on 14 Mc. s.b.s. were somewhat limited. However, he did



"Sorry OM, QRM here."

work quite a long list of Ws between 0615 and 1230Z. Most of these contacts were from the East side of U.S.A. and included WIG/G, ONK, KZJN, W2RSZ, K4BSL, TLJ, TJB, PAN, INL, LAS, FGU, W5SPU, WP8QZ, GZ, UAS, AMZ, WYATO, also KC4USE, VS1JV.

ADDRESSES

VR2DS-Pete Corner, Box 216, Suva, Fiji.
VS8AZ-Stan Crow, C. W., R.A.B. Borlidi, Aden.
ZD2GWS-W. G. Slinger, via R.S.G.B.
ELAA-Hen Bale, Le Tournau de Liberia Ltd., Liberia Field, Liberia.
OQ0RL-WAFTD, 2154 Woodward, Lakewood 7, Ohio, U.S.A.
SV0WZ-M/Sgt. S. R. Horn, Box 518, A.P.O. 291, N.Y.C. U.S.A.
TG8CW-P.O. Box 252, Guatemala City, Guatemala.
TG8FT-P.O. Box 115, Guatemala City, Guatemala.
TG5HC-via KSGOT.
V80AA-via R.S.G.B. (2Q1)
3AOM-via W7PH.
HK0AA-via KV4AA. (2Q1)

QSLs RECEIVED

2Q1: OQ5IG, ZP1LS, ZE1JF.
22Z: 102 QSLs for month. YS10, VR3Z, UA-00M Mongolia, UC2AD, UR2DK, ON/OK4R/ MM Antarctic, UB8JT, PY3LJ, LUKX, VK6TF.
3AOM-C. Chesser, COBKF, HK1X formerly TLX, VS9OC, XE1RM.
BE8BS-1F5MT, KG6CY, KL7AL, VR2DS, VS8AZ, ZS6EO, 5A2TF, MP4BCR/MM, KH-0D1L/ADM.
2AMB: CN8BP, CN8DJ, UA1KAE, 4STFJ, OZ3HW, ON4PA, KP4ACF, ZD2HE.

My thanks to the West Gulf DX Club in Texas and all those in VK who have sent lists and activities of their "doings" for the month. Information this month was a bit light on, but hope to increase the News and Notes section next month. 72, John.

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| Me. | E. AUSTRALIA — W. EUROPE S.E. | | | | | | | | | | | | Me. | |
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| E. AUSTRALIA — W. EUROPE L.R. | | | | | | | | | | | | | | | |
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E. AUSTRALIA — MEDITERRANEAN

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| E. AUSTRALIA — N.E. U.S.A. S.R. | | | | | | | | | | | | | | | | |
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E. AUSTRALIA — S. AFRICA

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W. AUSTRALIA — N.W. U.S.A.

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W. AUSTRALIA — N.E. U.S.A.

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NOTES

FEDERAL

W.I.A. REPRESENTATION ON SPECIAL AD HOC COMMITTEE

In accordance with the Postmaster-General's statement to the House of Representatives in relation to the forming of a special Ad Hoc Committee to review the frequency allocations for use by the Australian licensed services in the light of the Geneva Conference, 1959, of the International Telecommunications Union, the Wireless Institute of Australia has now been invited to send an official representative on behalf of the Amateur Service.

The Committee, to be known as the Radio Frequency Allocations Review Committee, will represent the Postmaster-General's Department, Defence Group of Departments, Department of Civil Aviation, Australian Broadcasting Control Board, the Amateur Service, the Radio Manufacturing Industry, Public Utilities licensed to operate radio services, Commercial Organisations licensed to operate radio services in their businesses.

The first hearings of the Committee is expected to commence about 3rd August, 1960, and must complete its work in sufficient time to enable the Government to consider its recommendations at the Geneva Conference are due for ratification.

Postmaster-General, Hon. C. W. Davidson, O.B.E., has said that this Committee will have wide terms of reference to enable it to fully determine the whole problem of frequency allocations to all classes of approved users in Australia.

At the time of going to press with this issue of "Amateur Radio," the Federal Council and Federal Executive of the Wireless Institute of Australia were examining the proposed terms of reference of the Committee and determining its policy in relation to them.

TRAVELLING OVERSEAS

The Hon. A. Fairhall, M.H.R., VK3KB, is travelling abroad for two months on a Commonwealth mission. His itinerary is taking him to Hong Kong where he hopes to meet the President of the Hong Kong Amateur Radio Transmitting Society and other members of the VSO gang. The President of H.A.R.T.S., Mr. G. A. Cuppleditch, has acknowledged a letter from the W.I.A. advising that he is arranging a reception for Mr. Fairhall at the airport if he can be arranged in relation to Mr. Fairhall's itinerary. The H.A.R.T.S. was a subscriber to the W.I.A.'s Geneva Fund in support of a Region III Amateur representative to the 1959 Geneva Conference and has been an ardent supporter for all that Amateur Radio stands for in the world of communications.

Mr. R. H. Cunningham, VK3ML, is also abroad and is making a personal call on behalf of the W.I.A. to the American Amateur Radio Relay League and the Radio Society of Great Britain.

Members might recall that the Executive of the W.I.A. is always happy to provide letters of introduction to overseas Societies to Amateurs travelling abroad whose itineraries permit them to undertake good public relations work in this nature in support of the Amateur Service.

SLOW SCAN PICTURE TRANSMISSIONS

Slow scan picture transmissions are being carried out by WA2BCW on approximately 29.5 Mc. Saturdays and Sundays from Elmirra,

CHANGE OF ADDRESS

W.I.A. members are requested to promptly notify any change of address to their Divisional Secretary, not direct to "Amateur Radio."

New York. The received signals can be tape recorded and tape sent to the station. A picture will be sent in return, taken from the tape. Slow scan pictures were recently sent across the Atlantic and received in U.K.

U.S.S.R. AMATEUR FREQUENCY ALLOCATIONS (1960)

| | | | | | |
|-------|---|-------|-----|-------|------------|
| 3.5 | — | 3.85 | Mc. | ..... | c.w., a.m. |
| 7.0 | — | 7.1 | Mc. | ..... | c.w., a.m. |
| 14.0 | — | 14.1 | Mc. | ..... | c.w. |
| 14.1 | — | 14.3 | Mc. | ..... | a.m. |
| 14.3 | — | 14.35 | Mc. | ..... | s.s.b. |
| 11.0 | — | 21.15 | Mc. | ..... | c.w. |
| 21.15 | — | 21.35 | Mc. | ..... | a.m. |
| 21.35 | — | 21.45 | Mc. | ..... | s.s.b. |
| 28.0 | — | 28.2 | Mc. | ..... | c.w. |
| 28.2 | — | 28.3 | Mc. | ..... | a.m. |
| 28.3 | — | 29.7 | Mc. | ..... | s.s.b. |
| 144.0 | — | 146.0 | Mc. | ..... | c.w., a.m. |
| 420.0 | — | 435.0 | Mc. | ..... | c.w., a.m. |

FEDERAL QSL BUREAU

VK3Z, R.A.F. Sqdn. Leader "Jumbo" Godfrey, is located on Christmas Island (Pacific), bearings 2 N, by 157 W. asks all VKs who have contacted his station to route QSLs via the R.S.G.B. "Jumbo" has a very few minor alterations to the rules of that award. W3ZA/V, SW, SWBA, 3WBAA all in Cambodia are ineligible as is also French Guinea 701 dated prior to 1st Oct.

The D.U.P. Certificate Manager of the R.E.F., Edmund Bubner, 7801, has a few minor alterations to the rules of that award. W3ZA/V, SW, SWBA, 3WBAA all in Cambodia are ineligible as is also French Guinea 701 dated prior to 1st Oct.

Writer desires to wish all readers good hunting and the best for Xmas 1960 and for 1961, and requests that the utmost co-operation is accorded Eric Trebilcock, VK3R-185, who is standing in as Federal QSL Manager until February, 1961.

—Ray Jones, VK3RJ, Manager.

NEW SOUTH WALES

Those who failed to attend the June meeting which was held in Science House missed an exceptionally interesting and topical lecture on "Amateur Radio in the Future." The lecturer dealt mainly with the do-it-yourself design of transistorised audio equipment suitable for Amateur use. As Mrs. Beaton once said, "First get your transistor."

Harold was also in the news during the month in connection with the Divisional matter. The Council, caused by the resignation of Ted 2ACD left the six members of the Council with a small problem on their hands—where to find a new Councilor? However, little time arithmetically soon did the trick and Harold offered his services to Council. Congratulations and welcome to Council, Harold.

Upon the invitation of the Blue Mountains Section, Vice-President Max ZMP and the President of the V.H.F. and T.v. Group, Bob 30A, attended a special meeting of the Section during the month. The main discussion at the meeting concerned W.I.C.E.N. activity in VK2. The outcome of the discussion was that, a few days later, the Council charged the Blue Mountains Section with the responsibility of W.I.C.E.N. co-ordination in VK2. The Section intended to form a committee to look after this important facet of Amateur Radio.

The visit to the Mountains also gained for the Division the services of Keith 2ABK. Keith has assumed the responsibility, along with one of our s.w.i.s., Barney Smith. Congratulations Keith and Barney.

HUNTER BRANCH

For once one of the learned members of the teaching staff of the Newcastle College of the University of N.S.W. lectured to an attentive audience which included the ZAYL 2ABK, 2ZL, 2JE, 2ZDF, 2SF, 2XQ, 2ZMO, 2XT, 2FP, 2RQ, 2JK, 2KZ, 2CS, 2ABT, 2AQR and associates Surridge, Stobbs, Bailey, McLachlan, Gray, Davis and Churchill. Even 2Q3 was early and it was nice to see an all-to-infrequent member, John XQZ. Ben was a welcome visitor even though he is not a member. Apologies were received from Messrs. Hamilton and Finlayson.

The lecturer, Bill 2ZK, gave a very illuminating address on double sideband, basing his subject on 5ZBH's articles in "Amateur Radio." The linear time variant circuits and auto correlation detection made the subject very take notice, but I still think President Lionel is not convinced that d.s.b. is as good as a.s.b. Me, I still like d.s.b.i.e.

Mention was made of the guest speaker at our Annual Dinner on 1st Oct., who will be

Graham 2AGH. Of course the Field Day at Blackhall will be the following day—detailed information later but keep the dates in mind.

Congratulations to Neil Connors in convincing the authorities that he knows his theory as he now has the call sign of VK3ZCW. To the President of our brother club, Glendora, we are pleased to hear that he received life membership of the Division. Congrats, Major, you will need something to bounce your head against now that Peachy George has parked himself in your district.

Very sorry to see that Harry 2AFA took a tumble for the worse the other week, but I believe he is now much better; have to take it easy, Harry. Keith 2ABK has started the little "Hansburgers" but his school, for some budding Amateurs are there though am a bit perturbed as a nephew of 2ZL is a member and I am sure we all agree that one City on the air is quite sufficient. Whilst on the subject of Zulu Lulu, did you hear the Gordie voice of Bill over 2ZL the other night. He thought they might not transmit the remarks he made about the P.M.G.—he was right.

Your Secretary, Gordon, helped himself to a machine gun and took advantage of his "sicky" to nearly complete his sig. gen. Gordon by the way has been promised quite a bit of material for the Annual Dinner, 1st Oct. Friends of John 2AUB will be pleased to hear that Margaret has presented him with a bouncing baby boy—Michael. Stan 2AYL and Stewart 2ZOP have been busy with their representatives in the demolition squad at the Divisional Clubs at Acheson Street, 2ZL and 2AQR and the demolition of the old 2ASA and George 2ZDC erect new poles at Bob 2IN's, at Long Jetty.

Doug 2ZAG will be the speaker at our next meeting on August 13 at the Unit, Tighes Hill. Knowing Barry, it should be good; also, don't forget that social meet at Bill 2XT's on 24th August. The weather should be getting warmer by then so may see you there.

CLUB ACTIVITY IN VK3

During the last two years there has been a significant increase in club activity in New South Wales. At the present time, 11 clubs are affiliated with the New South Wales Division. A large number of these clubs are in the district of the Hunter, with the assistance of the Correspondence Course of the Division. The Division encourages and assists the clubs in many ways—today's beginner is tomorrow's licensee.

One such club is the Narranderra Radio Club. This club was formed on 13th November, 1957, when a meeting was convened with the aim of forming a radio club. Those mainly interested at the time were Post Office personnel and the club was associated with the Narranderra Branch of the N.S.W. Postal Institute.

The first President was Bruce Milne (now VK2ZFM).

Immediately after foundation the club commenced A.O.C.P. classes and very soon five members of the club passed the examination for the status of Associate of the Division. The five members were Bruce 2ZFM, Bill 2AHV, Frank 2CAQ/P, Don 2AYR and Harry 2AFC.

Those early days the club has attracted the membership of other persons outside the P.M.G. and is now firmly established as a district activity. The club conducts classes and the President of the club, the present one of eight includes two XYLs. Some gear has been acquired by the club and it is anticipated that application will shortly be made for a club call sign.

Club activity embraces inter-town visits with nearby Griffith and last year the South West Convention was conducted by the Narranderra Club.

The present executive of President Bill 2AHV and Secretary Don 2AYR extend a welcome to any visitors to Narranderra. If your journey to the town of Narranderra takes the few extra miles and be assured of a hearty welcome and a raschew with the local Amateurs. (I wish to thank Frank 2CAQ/P for furnishing the details of the Club.—2ZMP.)

SILENT KEY

It is with deep regret that we record the passing of:—

VK4LC—Jim Currie.

VICTORIA

The general meeting of the Division was held on Wednesday evening 28th July, when Dr. Jim Goding, VK3ZGG, gave us a very interesting talk on the Manual Application of Electronics. Jim outlined various medical conditions, or rather ailments which could be treated or explained in terms of electronic terms, and did it in such a way as a layman was able to follow. All the members who were present were speaking. If that happens with certain disease conditions, the results are more permanent. Due to the lens of the projector, it was not available to see more of this interesting address. The questions showed that the boys were interested in what Jim had to say.

The main doors were then opened to admit all the talent scouts who had learnt of the vast reservoir of humour that was present at these meetings. And they were not disappointed as the usual rapid, provocative, humorous and well directed shots commenced as soon as the previous minutes had been read. It is simply amazing the way in which some people obtain publicity by moving provocative motions. But a counter motion was adopted and the boys will now be playing the "game" of "masterly inactivity," so will receive the usual prompt treatment. Replying to questions, the President stated that due to certain complications regarding party walls the re-building of the Institute Rooms had not yet been commenced.

In addition the administration of the Institute was being reviewed and steps were now being taken to improve the various tasks carried out by the Admin. Secretary, Council were also progressing with their plans to make the Institute more attractive to club members (what no dancing girls—Ed.) The full text of the findings of the sub-committee regarding the frequency policy by an independent authority was read to the meeting. Then followed reports regarding fox hunts, v.h.f., and all the other subjects which go to make the general business of the Institute. It was an enjoyable night, but not for one member present.

Wednesday was the meeting night. Perhaps this was uppermost in the mind of our friend, who had completely forgot the significance of the date. Because of this, he called on a fellow Amateur known to possess a friendly animal, which was furnished with a permit not recorded whether Ron was forced to accept the hospitality of the spaniel, but we do know that there are no good behaviour remissions in the first and first twenty years have been well and faithfully served. The Institute, Publications Committee, and everyone offer congratulations to yourself and Helen on this important anniversary.

To the consternation of all present, the meeting closed at 10.30. This was a catastrophe, because no one knew how to explain to their XYL how they could get home so early. She would never believe that the other meetings finished so late. But this problem was easily solved, everyone just stayed until the normal time holding the usual after-meeting conference, so the meeting closed at a later hour.

Our Edgemoor Division is in the process of obtaining more Car Badges. If you desire one, please let the Admin. Secretary know at JA 3535 or P.O. Box 36, East Melbourne, or let me know the broadcast or the frequency. ZJEO on 6 m. Price 30/- each, and if you wish one posted add an extra 1/-. We must know you require one within 14 days. The P.M.G. to allow playbacks. He has kindly offered his facilities to anyone requiring a check. He can be contacted most nights on 80 m. Thanks, Ron.

VK3 COUNCIL NEWS

Material from P.C. including the minutes of the Extraordinary P.C. meeting were ratified by VK3 Division. In general, VK3 policy in relation to v.h.f. bands, i.e. 6 m and up, is to consent to operation in bands not allocated to that frequency shift. It was proposed that the 6 m band be 56-60 Mc. in lieu of 50-54 Mc. However, we would prefer 50-50 Mc., which is a reduction but still in the International frequencies. For 2 m it is to be proposed to shift to 146-150 Mc., but again, a reduction to 139-144 Mc. would be preferable.

The advantages of having the Internationally used frequencies kept is obvious with moon, balloon, and other kinds of bounces in progress.

The resignation of J. Lancaster from Council Secretary was accepted. Jay is now Federal Secretary.

Council considered and adopted a report suggesting the Australian Broadcasting Control Board be a suitable body to consider frequency allocations, as it is already in existence.

Discussion also centred on getting 3W1 on the air as soon as possible. Time being more important than volunteers, it is better to incur expense in the erection of poles, etc., and get the job done.

Council also decided that as soon as it could be arranged, a six-week concentrated show more course be transferred for say half an hour every night on 6 and possibly 2 m.

EASTERN ZONE CONVENTION

Phoenix rising from the ashes is kid stuff compared to the awakening of interest in the Eastern Zone. It only goes to show that as an individual, the Amateur might feel he is all alone in his hobby, but when he meets, becomes organized and talks over things with his fellows, great things can be accomplished. Such was the feeling I received at Traralgon the other week when 3AKJ and myself made the trip.

Originally, 30 odd boys were to have arrived, but due to one thing and another, only 30 or so made it. As can be imagined a resurrection involves quite a deal of verbiage and the old faces and reminiscences combined made me feel that the spirit of Amateur Radio will live for a long time.

However, wipe the tear from thine eye and I'll prove to you. No one doubts the fact that the zone has come to life and without any ado the undernourished became cogs in the machinery: President, David 3DJ; Sec. V.P., CHH 3AIT; Jr. V.P. JM 3ZBY; Sec. Treas. Stan 3ZAB; Zone Organizers, 3ZAB and 3QZ; Zone Stations, 3AIT, 3DJ; Notes Correspondents, 3ZGV and 3ZBR.

The excellence of the dinner had to be tasted to be believed and our very sincere thanks was voiced to those OMs, XYLs and YLs who made it what it was.

Zone hook-ups are on Sundays, 80 m., at 9 a.m., also 2 m. Sunday and Thursday, at 8 p.m.

If the zone correspondents will write me with list of activities when and where and all other details, I'll get it to 3AKJ for the Broadcast and far enough in advance, for the magazine.

Next Convention? March 11, 1961, at Yarram. Among those present were the following (apologies if some are missed): 3PR, XYL and harmonics, 3BB and XYL, 3IZ, 3AKJ, 3AFL, 3TU and XYL, 3ZQA, 3QH, 3DY and XYL, 3ZDP, 3ZBY, 3QZ, 3TH, 3ZAB, 3ZBR, 3ZGV, 3AIT, 30 Mand XYL, 3ALK, Les Dale and XYL, Alf McKnell, Jack Williams, Mrs. Scott (XYL 3BBS) and a couple of others I can't decipher. John and Keith Robertson.

SOUTH WESTERN ZONE

The annual meeting of the Zone was held during the Ballarat Convention. Kevin 3AKR was elected President and the other office-bearers are: V.P.s, JM 3AIT and Bob 3IC; Sec. Treas. David 3AKN; Committee Sec. 3X; Brian 3ZBS, Gordon 3AGV, Dick 3ABK, Chris, 3AXU and Neil 3HG.

The zone's only income is on rebates on membership fees, so a little recruiting occasionally would help to boost our finances. How about aiming for 100 membership this year. Are there shops? If there are, then the club under discussion as five members have asked for it. If there are any more in the Zone who want this service, the committee or secretary would like to hear from you. During the year three A.O.L.C.P. members have made the grade to A.O.C.P. and we welcome Brian 3XN, Peter 3FX and Zora 3WB to the club. There has shifted QTH and big signals expected any time!

The Convention was organised by Brian 3ZBS in a masterly manner and the Zone is indebted to him and his helpers.

The National Field Day passed almost unnoticed by the Zone which is rather strange in view of the fact that it could be the country's top emergency net. Perhaps if mobile stations were worth a little more than portable ones? However, one certainly did unexpectedly find a claimant in the Zone.

The Warrnambool 6 m. net (3ANQ, 3ARJ, 3ZFG, 3FX) seems to be lacking a little since Peter chopped the beam down when the call arrived. Even 3ANQ has been heard on 40 m. Peter is mobiling in VK5 with a vest pocket rig running a watt or two. The 376 screen modulated by half 12AU7. Brian 3XN finally given up the quarter wave semi-vertical/semi-horizontal which the storm left and hopes to be on the air again. There is always chance of loading up that horizontal all-band rotary quad that stands by the laundry door! The rains shared with Peter 3HIG, the beam tanker "Alvenus." Pete was QSOed on 80 m., both phone and c.w., on his way into Geelong. Pete was QRT in the Bay for 32 hours before the weather allowed "Alvenus" to berth. The refinery while all one could hear on 80 m. was "Where's Pete?" Didn't anyone have a good strong spotlight? On the way back to

the Gulf many contacted Pete. Pete's QRA is C/o. Radio Officer, Tanker "Alvenus," C/o. Navigation and Coal Trading Co., 22 Billiter Street, London, E.C.3, not the RIP Bureau.

Neil 3HG tried his s.a.b. out on the Sunday 80 m. post morning. It works, too. Neil also was heard knocking over the Ws on 80 m. during the "CQ" Contest. Bill 3XE has just got the a.c. into his power supply and been heard talking about a kw. or so, when the contest was blowing up. Kerry 3AXT has found 80 m. also with his f.b. signal.

The O.T. net on 40 m. seems to have lapsed with the passing of Skene 2SS many months ago. Leigh 3H has been chasing thermistors there apparently longer rules the roost. You really must fix that b.f.o. too, OM. John 3AGD is reported to be using a new chariot for his mobile. Sounds a nice outfit, John Gluckliche Reise!

The next Zone W.I.C.E.N. practice is on the 23/6/60 on 80 m. and we hope at regular intervals.

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tervals after that. Anyone interested is welcomed whether members of the Institute or not. Please help make this a success by your attendance. Also please, more on the Zone hook-up to the nearest Zone group. Gold and keep John 3AKJ up to the minute for the Divisional Broadcast.—3AKN.

A preliminary announcement from John 3AGD will be the Boy Scouts Jubilee of the Air, to be held from midnight 21st Oct. to midnight Sunday, 23rd Oct., G.M.T. John asks that all Amateurs wishing to take part contact their nearest Scout Group and offer their services. John will be on the air (try 80 mc) on Thursday nights to tell you all about it. S.W. Zone members will no doubt be particularly active!

WESTERN ZONE

I wish to thank Merv 3AFV for writing up the notes in last month's magazine, also Gordon 3GW for all work he has done for our Zone in answering W.I.A. broadcasts and other meetings during last couple of years.

Keith 3AKP has recently completed his mobile tx, using a transistorised power supply, but as yet, he has not finished the converter, which he is putting in front of the car radio.

Another Keith, 3QG, who happens to be our newest fully fledged Ham, is at present busy winding transformers, so guess we will hear him in the near future.

MOORABBIN & DISTRICT RADIO CLUB

At the June meeting of the above club it was decided to try to encourage new members, both junior as well as senior, and with this in mind, George 3NQ, who is well known as an instructor of electronics at the Melbourne Technical College, offered a scheme of instruction for members who have not as yet passed their A.O.C.P.

The scheme involves a course of instruction in theory and in practical basic electronics, and is so designed that members will receive the necessary tuition to bring them to the A.O.C.P. standard. Limited Licence.

The theory class is to be conducted by George himself, and the practical by Bill 3JE. The theory on a Wednesday evening and the practical on a Thursday evening, starting in September.

The course will be free to members, because as George puts it, we are Amateurs and as such should not receive remuneration for any service rendered to our fellow Amateurs, or for that matter prospective Amateurs. Non-members may participate by simply becoming members of our club, the fee being nominal at 10/- Juniors, and 20/- seniors, per annum.

Anybody interested, or anybody knowing anybody interested, could, in the first instance, contact me, 3LH at 1013 High St. Armatree, or phone BY3118 any time of day or evening, when I shall give them further information.

After the meeting, Col 3ABO gave a talk on transistor applications. This proved both interesting and instructive, especially the transistor power supply and modulator.

The Whist Night held on Saturday evening, June 18, at the home of Arthur 3AWO, was a great success and enjoyed by all those who came along. Our President, Bob 3AQK, passed out a vote of thanks to our guests who put on a really first class show. It was decided there and then to conduct another evening in August, and Bob 3WZ kindly made his home and facilities available for that occasion. More will be heard of this later.

WANTED! ARTICLES

Can you write an article for "Amateur Radio"? How about one for Hints and Kinks?

MELBOURNE UNIVERSITY CLUB

At the Engineering Exhibition the other week the boys had the club station, 3ATM, set up as part of the electronics display. Stations on 40 mc were worked. Michael 3ZED appears to be moving his base here and with his appointment as secretary to VK3 Division, we hope that he can last the distance!

GEELONG AMATEUR RADIO CLUB

The Annual Meeting of the Club was held on Wednesday night, 29th June. Dick 3ABK, the Club President, occupied the chair and there was a good attendance of members. Reports were given on the activities of the Club during the past year by the President and on the Club finances by the Treasurer, Vic. Clark.

Propositions taken to make some alterations and additions to the Club's constitution, bringing it more into line with present day requirements.

The election of office-bearers for the coming year was the final item on the agenda and resulted as follows: President, Harry Mitchell, V.P., Bob 3IC and Bill Husin; Sec., Jim 3ABT; Treas., Vic. Clark; Librarian, Eric Coxall; Auditor, Geoff Woods; Committee: Bill 3BU, Peter 3APK, K. Vriens, E. Coxall.

A general meeting followed the annual meeting with the new President in the control. Members regretted to receive in the correspondence the resignation of Jack Mitchell. Jack, who has been a member of the Club for many years, finds it necessary to discontinue association with the Club due to pressure of work. A new member, Calvin Lee, was elected to full membership.

Peter 3ZAV reported to the meeting that there is a regular hook-up on 144 Mc. on Saturday nights for those interested.

Club meetings on July-Two visitors were welcomed—Barry Smyth and Ray Cowling, and apologies were received from 3BU, 3AFK and K. Vriens. The syllabus item was "Questions and Answers" and a number of really knotty problems were presented for discussion. Eric Coxall did a good job explaining points in rejuvenating and repairing an old but elaborate d.c. wave.

Club Exhibitions.—An exhibition of Amateur Radio equipment will be held at the club rooms, Gerdingup St. Geelong, on Saturday, 10th, 1960. A number of stations will be in operation and all listeners are asked to keep this function in mind. More detailed information will be available later. . . .

QUEENSLAND BRISBANE AND DISTRICT

This month it is my sad duty to report the passing of another member of the Queensland Division; early last month we heard that Jim Currie, VK4LC, of Coburg, had joined the Silent Keys. Whether Jim was active on the bands or not, he always remained a member of the W.I.A., telling me in a letter while I was Secretary that he liked to remain a member for sentimental reasons. I say, with sincerity, that Jim Currie's passing is a great loss to this Division.

The "Sunday Beer" at Fred's QTH have been very well attended and we are beginning to clean up the outstanding disposal gear orders. If you're still waiting gentlemen, please assure me that it won't be long before you get your gear. We want to finalise this business as soon as possible before we release more gear.

It's amazing how these "t.v. bods" shift around! Frank 4ZCM came to VK2 from G land when T.V. started down there and then shifted to Brisbane when it started here. He was the Technical Manager of a big service organisation and recently he shifted again; this time he has gone to New Zealand and, I believe, his only regret is that he can't be ZL is that he will have to concentrate on Morse since there is no Limited Licence in New Zealand.

If you subscribe to "CQ" you have probably seen the Contest they run for QSL designs. There have been some really good entries over the years it has been running, and in the

June issue I was pleased to see that a VK4 card, though not winning the prize, did reach the final and was printed. This was the QSL of Charlie VK4RG and I can say if I was the judge of the Contest, the winner would have been his card or the one from VE2YU.

Gosh, did you see the way our Editor, Ron 3RN, "shot-me-down" last month on the silicon diode? Well, the Contest, the winner was the OASL is the beautiful little diode usually used in t.v. receivers with 115v. applied to the voltage doubler circuit to give 280v. d.c. output. With 400v. applied to the p.d. of the diode, we couldn't be used as I stated last month (?)

Here's one for the "Long-Time-No-Ser" Department; Stan 45A asked me if I was busy one Saturday afternoon recently and when I said I wasn't, he picked me up and we went to visit Albert 4LT, at Greenslopes Rept. Hospital. The last time I had seen him was back in 1948 or 1949 and it was great to see him again. He is active again and we have his promise that he will come to a general meeting in 1960.

Back in Brisbane after a fairly long spell in Longreach is Col 4CI; he was very active in the west while he was out there and there were a couple of articles in the magazine. Outward Bureau from him each month. We hope the circuits sent out with "QTC" are useful and would be glad to know if you gear disposal you would like to have circuits of. We will be able to send out circuits like the ones sent with July "QTC" every two or three months and would like to know which ones you need!

TOWNSVILLE

The Publications Committee is to be congratulated on the July issue of "A.R." The column "The Hon. Gentlemen Said" was of great interest to all Amateurs, there should be more articles of same, whereby Amateur activity is concerned, as this is the only way to put out the of the Amateurs and to concern them, as argued by the highest bodies in the land. Newspaper versions are extremely condensed and would not give the full picture of the situation. The correspondence column is again growing and should merit further increase, while Casey may tread on a few corns at his time. . . .

On the recent long week-end (Queen's Birthday) the local Amateurs held a picnic and the get-together was really enjoyed by all and the consensus was "There should be more of them."

Unfortunately, I was not present, as given the week-end off I took the opportunity to visit Alherston (280 miles) and met some Amateurs in the vicinity, together with some prospective members. Main cry was the non-arrival of "A.R." and who was to blame? Did my best to soothe their ruffled feathers. Another topic of conversation was when were we going to form a branch of the W.I.A. for the North? Never fear, chaps, this is in the process of the making and the project will be the Queensland Secretary, Stan 45A, in August will consolidate the position. Some of the far Northern boys offered to help out with the band contacts.

Band conditions still sliding down the scale and little DX heard on the popular bands. Mised out on the Marcus is, expedition; hope to see a lot of interesting projects on now they achieved their objectives. This information could be passed on to help out others. See page 1 of "A.R." for details and for the down the dope on your projects (it will be gratefully received.—Ed.) and if it does not make the pages, you are only out 5d. for the Reminder. Remember, we have many failures and some goes for authors before they made the grade.

Arthur 4FE lays claims to be the first to new arrival of VK3 this will certainly help the DX boys who are after VK awards and who worked many VKs before working the coveted Northern Territory. Bob 4M had one Mc.-speaking at arrival of VK3, seems as though the order will be duplicated and looking for someone to take the chair after a long silence and looks for the end times on 7 Mc.

Claude 4UX and his pupils recently paid the club a visit and just waiting for their call to the club. He has been at the Amateurs in Ayr as there are in Townsville (hope so). Nick 4WT recently heard on c.w. that he was located at the club. Apparently he is pursuing while the band fades to its lowest point of the cycle. The local Z boys are

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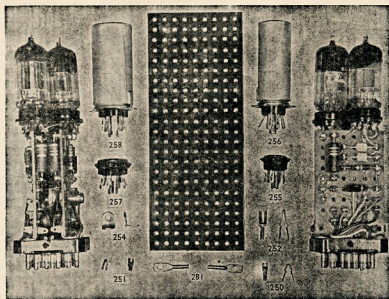
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having a lean time on 50 Mc. Japan only heard on occasions, but were happy to have an opening to VK3 the last Sunday in June. This band should open as the months pass by and the small signals should see this band come into its own.

SOUTH AUSTRALIA

The monthly general meeting of the VK3 Division, the Division that has the most, was held on the 2nd Sunday at 8.00 pm. Above average attendance, considering the state of the weather. The rain had been falling steadily since about 10.00 am. The attendance was 1 and I am sure that few members expected to see such a good roll-up as came along. The meeting took the form of a Buy and Sell Night. You can buy and sell anything you want, a rare-deevil, fancy alluding straight out to it being a buy-and-sell night instead of conforming to the VK3 regulations and selling a tender receiving night, and whilst the quantity of goods brought was a little below normal, the quality made up for the paucity of supply.

The audience was in a definite buying mood and good prices were received by the sellers, as they were. I checked the list of the Divisional coffers. Once again every article was sold, to the mutual satisfaction of all concerned, and I feel that any member who has a load of gear going, in his shed or in the shack, is foolish not to bring it along to one of these nights, and give someone else a chance to buy what they may want, and at the same time, to hold of some cash towards that new project that they have in mind.

The auctioneer was, as usual, that deaf-and-dumb adonis, with the falling chest, none other than Warwick (Pansy) to you, his shed or in the shack, is foolish not to bring it along to one of these nights, and give someone else a chance to buy what they may want, and at the same time, to hold of some cash towards that new project that they have in mind.

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Nothing of any importance came up in general business, in fact nothing of any importance came up at all night except an application from a gentleman who wanted to be able to become a Radio Amateur. What is important about this, you say, well nothing much I suppose except that the applicant is blind and deaf. The matter will receive the special attention that it certainly deserves, and the Radio Branch has promised every co-operation. Might as well say that the applicant is blind and deaf. The matter will receive the special attention that it certainly deserves, and the Radio Branch has promised every co-operation. Might as well say that the applicant is blind and deaf.

The opportunity is taken here of reminding everybody again that all future meetings of the Division will be held at the Paul's Rovers ground, near the corner of Flinders and Pulenney St. Incidentally, the parking problem will be definitely eased at this new venue.

John 5EV is regularly travelling between Elizabeth and Woomera these days and of course this does not lend itself to getting on the air very often. Ian 5QX is still busy knocking over the DX on 21 Mc. and hopes soon to have a six element beam up on a tower. This tower is being built by the CIVE SVE are hoping to start teleprinter work soon, locally first and then for a shot at some DX. Cyril 5DY is carrying out some tests on the 40m band and is hoping to bring in an ultimate in transistorised beam turning and indicator mechanisms. What about an article for "A.C." Cyril?

Bob Goulet, from Melbourne, visited 5XK during the Queen's Birthday long week-end and had a look-see at nearly all the Ham shacks in the Tully area. He was very interested in other of his periodical trips to G land; he and Mr. Menzies are running neck and neck, and as he plans to spend a lot of time working some contacts from some rare spots on the way. It is not suggested that the plane waited for Tubby to work the DX!

Ken 5Y is back in the U.K. in October and openly admits that he will miss us all. He did not mention me personally, but of course I am sure he will be with us at least able to kick up his feet in this

year's R.D. Contest before he goes. Ron 5FY has been busy working on the family jolly with a natural suffering of his Amateur activities. Did not see you at the meeting, Ron, but I am sure you will be back soon. Keith 5EJ is making a permanent move to Woomera, so will expect to hear him from the local club station after some soon, to wit, 5WC. Clive 5FE, who is now arriving in Eliza, is going hammer and tongs on 40 mx. He has a very impressive tower erected, but nearly lost it whilst erecting same, his XYL saved him by coming to the top of the tower at time. Where would we be without these XYLs? Don't answer that! Jeff 5N2 is active as usual but is giving the momentary momentary momentary momentary momentary Ted 5JE please note, your heartfelt exhortations have not been in vain. This 40 mx c.w. must wait because I was sent a new 100 watt bill via QSL. Why doesn't somebody tell me these things? Don STM can be heard on 80 mx telephony until the wee small hours. Heard the harmonics setting their store on 9 mx the other Sunday, Don, although it was the understatement of the year on your part to study them. I am sure that the boys who were the background noise brother, more power to them I say.

Ben 5BP has all his gear in places at the moment re-building, including the modulator, although he is always quoted as being 100 per cent. c.w. He now has a jeep as well as the usual car. I am sure that he will be back in the seat. How rude can one get at Elizabeth? Harry 5TU has taken his beam down, nobody knows for how long or why, but a constant whine being heard, I was sent a new 100 watt and the slightest sign of movement will immediately be reported.

Don 5A has been heard on the air now and then, and has also been seen pottering around in his garden. There is no truth in the rumour that he is planting copper wire in spaced plots. John 5ZM is still the man curing tv. sets and managing to get in some solid movie 288 Mc. at the same time. There is no wonder that he is so busy.

The Elizabeth Radio Club's morse classes are going great guns. S.w.'s. Tony and Layton doing extra well, so much so that Layton, who was the top of the list, looks like a fair chance in his father's footsteps. Tom 5AQ, from Leigh Creek, was noticed at this month's meeting, judiciously bidding at the right time. I must say that the joke is on Tom, he finished up with two pence belonging to John 5KX at the end of the meeting, and if that's not a record, what is?

On Friday, 17th June, at 9.30 p.m., the VK5 Council aired a half hour tape documentary on Amateur Radio over the local ABC station, 5CL. The tape was a very good one, and the very excellent job all round, being well written and compered, and those who took part, both vocally and practically, are to be congratulated. David 5HW demonstrated the use of the 5JC and 5KX, gave of their best for W.I.C.E.N., and Gordon 5XU handled the playback of a W.I.A. Sunday morning session and also doubled for the talk on Moonwatch. Altogether a jolly good job of work, although the c.w. boys could be pardoned for complaining. The tape was a very good one, and the very excellent job all round, being well written and compered, and those who took part, both vocally and practically, are to be congratulated. David 5HW demonstrated the use of the 5JC and 5KX, gave of their best for W.I.C.E.N., and Gordon 5XU handled the playback of a W.I.A. Sunday morning session and also doubled for the talk on Moonwatch. Altogether a jolly good job of work, although the c.w. boys could be pardoned for complaining.

Bearing this in mind, I am somewhat at a loss as to why the general membership of the Division, the publicity officer, and even the president, should be so much in the dark. Unheralded and unused, this fine documentary was aired in almost complete secrecy and consequently was not known to most of those most likely to appreciate it. It goes without saying that this lost opportunity to secure large chunks of publicity for Amateur Radio in the media is a pity. The quarter has provided me with more bullets for these notes than I could ever hope to handle, but I cannot bring myself to pour the lead on the boys. It is being so painful enough as it is, such being my humble and forgiving nature. However, said he, slightly tilting his halo, I would like to see in fact in the future, the ex-Councillor of many years standing, a past Sub-Editor and Publicity Officer, and last but not least, a present publicity officer, to be given this high-sounding title throw you, it just means that due to our incorporation, some likely looking kid must be made to be the one to be shipped into jail if the Division does anything wrong, where was I? Oh yes, I would be failing in my duty if I did not point out that individual efforts are not enough, the old-fashioned method of unified and concerted effort on the part of a Council and its members is the only way to make, my smirk is showing! By the way, about

a week later on t.v., a half hour play bobbed up entitled "Murder of a Ham," and I hasten to say that this was not written by Council and certainly was not an example of their wishful thinking. I am sure that you will keep your eyes open for it, it was well worth looking at.

Bob 5RI heard on the W.I.A. call-back the other Sunday with an f.b. signal. He asked Gordon to GRX whilst he tuned up for a second, but I backed out at this, if he could get a signal, I would be sure to get one. Did he get when he tuned up? I did not fancy putting back a new antenna coil in my receiver. Col 5XJ heard on 7 Mc. the other Sunday, giving a demonstration of his high and low power switch to John 5DJ. The difference between high and low in watts was very noticeable, but the difference in the signal went up on the low power. Watt was the difference in power, Col?

My correspondence from the Upper Murray reports this month being somewhat on the quiet side, as Tom 5TI has confined his total activities to Sunday morning appearances only. His modesty prevents him from telling me about a significant demonstration of his documentary tape previously mentioned, and he received several complimentary reports on his part in the tape, from the local region. I have your autograph, Mr. Laird. Sir!

Harry 5KW will be leaving the Upper Murray district in the near future, and will be taking up a technical position at the local b.c. station, 5KA. He has been at the local regional, SRM, for some 10 years I think, and I hope that he will be a big help to the club. Meetings now. What about it Harry? Fred 5MA has been confined to his bed for a few weeks now, and I am sure that he will be back that he is fit and well as I write. Naturally no Radio activities.

Which reminds me, I met a certain person on the 1st of the week and he said, "Did you know that Gordon 5KU was in bed with the doctor?" I said, "No, but half his luck," and he said, "Well, he is in bed with the doctor. They reckon the VK5 scribe is a fit candidate for the looney bin. Anyway, Gordon is fully recovered as he write, and if anybody else is, I am sure that he will be back. It will remain my secret, I am not in the best of health myself, I feel that I might have to leave the club for a while, but I will be back soon."

The Upper Murray gang have not done any more about the portable/mobile tests that they planned, mainly because the temperature outside is so hot, and it is not conducive to such experiments. What an alibi!

The S.E. group held their promised "Old Timers" Night this month and it was an outstanding success. Some 100 members took bits of equipment was displayed, and with Claude 5CH carrying round a list of call signs since 1924, quite a number of members are still current. The members of our hobby came to plenty of discussion. No mention of any sponge cake, so I am not in a position to say how good your goodies were passed round, however I will take a risk and say that they were and a good time was had by all. It will be remembered that I was given an invitation to the "Old Timers" Night, but due to circumstances beyond my control, I had to reluctantly decline. Just as well that I did, my dear friends, as I am sure that you would not as a visitor! How unkind can they get at Mount Gambier?

Claude 5CH has had a few contacts on 7 Mc. but as he has said, the moon is the devil, as he thinks, can be personally proved that he has been active on 7 Mc. because despite the oft repeated remark that I am never on the v.c. I contacted him late on afternoon, and he had a pleasant chat for some time. Tom 5TW is another quiet one this month, probably the above-mentioned dew, but he also has managed to snare a few on 7 Mc. Harry 5KU has been on 14 Mc. occasionally, but most of his time has been expended on his leaping Lena. Harry 5KU has been on 14 Mc. occasionally, but most of his time has been expended on his leaping Lena. Harry 5KU has been on 14 Mc. occasionally, but most of his time has been expended on his leaping Lena. Harry 5KU has been on 14 Mc. occasionally, but most of his time has been expended on his leaping Lena.

David 5MS has been fairly active on 14 and 21 Mc., and has been giving the tx the once-over in preparation for the coming R.D. Contest. As 5CG has been active on 14 Mc. this it can be safely deduced that he has his eyes and ears on the prevailing DX. Col 5CJ has been heard on both 3.5 and 7 Mc., with varying success. I am sure that he will be down there have signified there intention of having a whack at the R.D. Contest this year. Good luck to all here's hoping that idea catches on in all directions.

Arch 5XK always seems to sneak into this section of the notes. I do my best to treat him as a regular member, but he is not a regular member. This time he decided to

take up canary breeding at Lucindale, and write a book about purchasing a male canary and start back to wait for results. He certainly got results, in a manner truly worthy of Arch. The canary started to lay eggs! He is at present trying to decide whether all he has read about the birds and bees is all hooey, or whether he has been taken for a ride. Take him home and hide him in a closet.

Heard Dave SAW from Penola in QSO with John 5DJ at Kingston the other early evening on 7 Mc. and their main topic was 288 Mc. activity and the purchase of a high power beam. Dave and I were talking about the beam from their talk about beams up on top of windmill towers, etc., etc. The 288 Mc. activity was planned for the 28th of the month. I hope the v.h.f. correspondent for VK5 is not read this paragraph, he will think that I am trying to riddle his thunder. As if I would! George SEC and I was heard in QSO with Gordon 5XU after the W.I.A. session the other Sunday, and from the conversation I gathered that George had attempted to emulate Compe 5EP by having some sort of a prang with his car. Fortunately nobody was injured, but it has taught George what a bad example Comps can be. Fancy letting a wife see the VK5 notes at times. Max 5GP heard mobile on 7 Mc. as he was touring down the Anzac Highway on his way home. From daily toil. A real one, but I don't think I will receive any answer to my call. Don't often hear this call sign these days, but now that Max has suddenly appeared, I am sure that we should be hearing it often. George 5GD also heard on 7 Mc. the other Sunday morning. This is another one who used to be always on the air, but I haven't heard him these days. Nice to hear your voice George. Lance 5XL from Clare heard on the W.I.A. call-back recently and I had the opportunity of working him. Nice to hear your voice. Lance was being heard down in the city because he had forgotten to connect his aerial. No answer to this mystery as yet, but tune in next month for absorbing details of this mystery of the year.

As I write, the Elizabeth boys are announcing an expedition to the state of Alice Springs beginning on 3rd September until the 14th. This is somewhat belated news to most, but it is possible that a few have not heard and will be glad to have the opportunity of working what is now VK8. The expeditionists are Ben 5BP and Jeff 5NQ, with Bill 5EW handling the arrangements. The Alice Springs is the mode of operation and although this paragraph might be a little late, it is possible that some of your DX friends might appreciate the mention in this next column. This is really a double event, because not only will it be a Northern Territory contact, but it will also be a new prefix, VK8. Try it on some of your contacts, not only will it amp the chance.

ELIZABETH AMATEUR RADIO CLUB

Seven years ago, Salisbury, a township some 15 miles north of Adelaide, was surrounded by pastureland. Today it has almost been engulfed by a new town, Elizabeth, with a population of some 17,000 souls. What more natural, then, than an Amateur Radio Club to appear?

Five months ago the Club was formed, and has now become part of the new town. Some of the members are: Ben 5BP, Jeff 5NQ, VK5 5BP, 5BS, 5DY, 5EJ, 5EV, 5FD, 5NO, 5ND, 5DR, 5QX, 5TM, 5ZCH and 5ZJM.

The next meeting will be on the first Saturday of every month at the Elizabeth South School, and visitors are welcome. The hurry-bury of sorting out a constitution, etc., has been done, and the members are affiliated with the W.I.A. (S.A. Division).

Very shortly the Club will be issuing a certificate for "State for All and Elizabeth". Details will be given later.

Every Monday evening at 7.30 C.S.T. the Club members have a "get together" on 40 mc. The Club has the best power output, controls the net.

WESTERN AUSTRALIA

The monthly meeting of the W.I.A. was again held at the Mends St. hall and had quite a good attendance. Everyone enjoyed the evening after getting mixed up with an amateur gymnastic group and the Police Force—you see, some strange company.

The meeting was quite a short one as there was not much business to discuss, after which Cole 6CS took the floor and gave us a lecture on the use of the audiometer. This finally explained the various types of deafness, the reasons and remedies, then went on to explain how the degree of deafness was determined by the audiometer. A demonstration of the audiometer was given and finally how the carpiece was made. This demonstration Cole acquired the assistance of Dennis Cook who was very willing, QRX, at least I

think so, for Cole had mentioned that sometimes the place cast a brief glow on the ear. Anyway, Dennis made himself comfortable on the table, closed his eyes and I think began to pray silently while "Buto—", I mean Cole, went to work on him. It was very interesting and the cast was made. It did come out of the ear in one piece and Dennis has recovered 100 per cent.

I was not present at the monthly Council as I had to go over to VK2 on business, so I cannot report on the meeting till I find out what was decided. I was heard at the hand of Ron 6KW. I guess nobody walked off with the "150 watt table topper," anyway, better luck next time, fellows.

Before I went away I went and saw 6RW and his QRP transistor rig. The whole thing is about 6 x 4 x 3 inches and runs less than a watt. It was made at the hand of Gary giving a good signal which seems to be all modulation and no carrier, but Ron is not happy with it because it is not controlled and being such small power he finds it very hard to make contact, but once having made contact it's 100 per cent; stick to it, Ron.

While over VK2 I wanted to visit all the VKs I had worked, but no matter how I tried to get away from the clutches of the firm, I could not, but one evening I gave them the slip and made an attempt to visit the Mark in Kingsford. I took along a friend who was also interested in Radio. On arrival, I knocked on the door and was welcomed in by producing my QSL card, but Mark did not seem too happy to see us, but when he saw the card his color came back, his breathing restarted and some manacles were taken off his weak, "Come in." You see, Mark is a taxi driver and if you have been to Sydney you will know that taxis are very hard to come by. We looked like a couple of detectives. Anyway, after liquid refreshments, we saw the mighty 6 watt rig which does such a grand job on every QRP. Mark has worked Europe, the States and many other countries on phone, and soon his XYL will have her ticket.

Many of us have tried to vain to get our XYLs to take an interest in Amateur Radio, well Mark has the solution, build the rig in your bedside table, move into a small flat, turn on the early morning paper, get rid of the sheets; this will keep the XYL awake, and as Mark's XYL says, "If you can't fight it, join it." Now when your XYL leaves you contact Mark, he has the solution, the very one as he is very happy. Mark uses a ground plane on the roof of his flat and has four t.v. antennae around it so that he can hear anything. This has it v.t. So 73 to you Mark and your XYL, from us all here in VK6. "Don't forget 87," hope to stand still in one place long enough this month to bring you more news on VK6 next time chaps.

TASMANIA

Remember, the R.D. Contest. We want a log in from you, and that means you, so that we can retain the Trophy. Last year we won because of the high percentage of participation of VK7 Amateurs in the Contest and the excellent return of logs. And we won it this year. Best of luck in the Contest chaps.

Jack 7JB is re-building his rig to overcome the problem of t.v. to his shack. He expects to be back on the air in time to iron out the bugs before the Contest. Jack is also building a hi-fi set, using a pair of EL84s in push-pull, and he says he will be able to work very well indeed. Den 7DK made a quick visit to Hobart late in June but lack of time did not permit him to visit the shacks around the town. Better luck next time, Den.

Keith 7BX and Doug 7DW are very pleased about working KG6ICD, who was spending 48 hours in Hobart at the end of July. Doug and Marcus Island, wherever that may be. Myles 7MF should have his beam up and his rig ironed out in time for the R.D. Contest, and no doubt you will QRM me Myles, keep it up, too.

A very important and far-reaching matter was brought up at the July meeting at the behest of your Council. The subject matter was the commencement of a fund, either by direct giving, or interest-free loan, or low interest-bearing loan to provide the capital for the eventual purchase of a VK7 headquarters. The idea received general and sympathetic acceptance and various suggestions were advanced with the idea of providing the necessary finance. Can you help in kind or with ideas? It is a very important matter, please do not let it pass.

Activity during June was very slight, due to several causes, the introduction of t.v. to the South, the very cold weather, and the appalling band conditions almost every night.

80 mc was the only band to reward activity, and it was most gratifying to find so many new Amateurs using c.w. on that band, and in most cases it was beautiful code to read. Many Amateurs of much longer standing could probably follow their examples.

Application is being made to the authorities to allow re-radiation of the Divisional Sunday morning broadcasts on both the 70 and 144 Mc. bands, so that the v.h.f. will be able to share in it. The date for the opening broadcast is not yet known.

Charlie VK5 had the misfortune to drop the limb of a tree across the elements of his new beam. If you had left them bent Charlie, the pattern could have been quite interesting.

NORTH WESTERN ZONE

How, by the time this does fly? Another month gone by and what have we achieved. Yours truly has obtained some dope, etc., made a few calculations, etc., and gathered unto himself a few more bits and pieces; all with regard to firing up some 522 gear on 2 mc. How about a few zone members letting me know something of their doings. Dennis 7DR has repaired his feed line; it did look strange with one side hanging down like a tuning stub; also he has peaked the Eddystone on 30 mc and is valuing calling CQ VK6. Max 7MX has put himself a huge modulation. I wonder what he will sound like with plate modulation; I guess he will still be the same old Max.

The next meeting was held on the fifth of July at the usual place and fourteen members were present. A tape was played accompanied by some of the members of the t.v. receiver, from start to finish. Supplies are always partaken of and enjoyed; likewise the washing up afterwards.

Quite a discussion was held re the mobile gear for the Burnie Fire Brigade and the two mobile units were returned with their receiver sections duly wired up. It really looks like the project is being carried out very well again. Hope I will be able to report completion of the mobile units in next issue. Thanks go to Ray Schultze and David TMS for the constructional wiring to date.

HAMADS

1/- per line, minimum 3/-.

Advertisements under this heading will only be accepted from Institute Members who desire to dispose of equipment which is their own personal property. Copy must be received by 8th of the month, and remittance must accompany advertisement. Calculated on the basis of space on an average of six words a line. Call signs are now permitted in Hamads. Dealers' advertisements not accepted in this column.

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IN

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